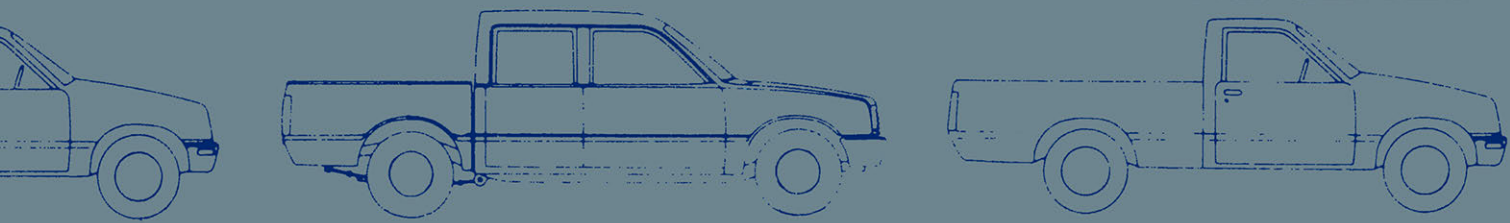
HOLDEN

Rodeo

OWNER HANDBOOK

Petrol and Diesel

KB SERIES



Vehicle Identification Certificate

Owner's Name Mr. Mrs. Miss .....

Address .....

Town ..... Phone .....

State & Postcode .....

Reg. No. .....

Model Name .....

Vehicle Identification Number (V.I.N.) .....

Eng. No. .....

Odometer Reading .....

Selling Dealer's Stamp & Signature .....

Date of Acquisition .....

Part No. 92022950 Oct. 1983.

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This handbook contains important information necessary for the good performance and maintenance of the vehicle. Please leave it in the vehicle at the time of resale to assist the new owner.

GENERAL MOTORS-HOLDEN'S SALES PTY. LIMITED

New Vehicle Warranty

GENERAL MOTORS-HOLDEN'S SALES PTY. LTD. HEREBY WARRANTS THAT IT WILL MAKE GOOD, WITHOUT CHARGE, ANY DEFECT WHICH APPEARS IN THE VEHICLE IDENTIFIED IN THE VEHICLE IDENTIFICATION CERTIFICATE FOUND ON THE INSIDE OF THE FRONT COVER.

Provided

1. the defect has been notified to an authorised GMH Dealer or Service Dealer:
   (a) before the vehicle has travelled a distance of 20,000 km, or:
   (b) within 12 months of the date of delivery of the vehicle to the first retail purchaser (or in the case of a Demonstrator vehicle within 12 months of the date when it was first placed into service by the Dealer)

   whichever comes first, and
2. the vehicle has been returned to an authorised GMH Dealer or Service Dealer

And

3. the Dealer has determined that the defect complained of *is* one of material or workmanship and *is not* caused by:
   (a) misuse or abuse of the vehicle such as by racing, rallying, overloading, etc. or by neglect
   (b) operation of the vehicle after it is known to be defective
   (c) accident or deliberate act
   (d) atmospheric fallout or flood, hail, salt, etc.
   (e) failure to carry out proper maintenance service
   (f) alteration or modification of the vehicle
   (g) the fitting of parts or accessories not marketed by GMH
   (h) any work carried out on the vehicle by someone other than an authorised GMH Dealer or Service Dealer,

BY THE DEALER (or as otherwise decided by GMH Sales) MAKING GOOD THE DEFECT BY REPAIR OR, AT THE OPTION OF GMH SALES, BY REPLACEMENT.

Excluded from this Warranty are

- defects in tyres or tubes (these being warranted by their manufacturers), and services such as engine tuning, brake adjustment, replacement of air and oil filters, etc. which are required as part of normal vehicle maintenance.

This Warranty applies only to vehicles operated in Australia and is given to the person who is entitled to possession of the vehicle whether as owner lessee or otherwise and is given in addition to all rights conferred by law on that person.

Owners of vehicles operated outside Australia should consult their local dealer regarding the warranty applicable to their vehicles.

Notice to Customers

No GMH dealer or other person is authorised or permitted to give or make any statement assertion or undertaking in relation to the quality performance characteristics descriptions or fitness for any purpose of any GMH product or in connection with the supply of any GMH product, which is at variance with any written statement assertion or undertaking on any of these subjects given or made by General Motors-Holden's Limited or General Motors-Holden's Sales Pty. Ltd. in its published sales literature, and neither company accepts any liability for any such unauthorised action.

General Motors-Holden's Limited and General Motors-Holden's Sales Pty Ltd have franchised dealers in many parts of Australia for the sale of service parts and the provision of service to owners of GMH's products. Every endeavour is made to ensure that such dealers carry adequate stocks of service parts, and are equipped to provide satisfactory service, but neither General Motors-Holden's Ltd. nor General Motors-Holden's Sales Pty. Ltd. makes any promise that such parts or service facilities will be available, or available at any specific location or any particular time.

GMH Parts and Accessories Warranty

General Motors-Holden's Limited warrants in respect of GMH parts and accessories required as replacement parts, that it will make good by repair or at its option by replacement any defect occurring in any such GMH parts and accessories within 3 months from the date of acquisition or in the case of a GMH part or accessory which has been installed in a vehicle by a GMH Dealer or Service Dealer before such vehicle has travelled a distance of 6,500 kms from the date of installation, whichever first occurs.

A Message from GMH

Thank you for choosing Holden. Your new Rodeo is the product of many years research and planning. We are very pleased and proud of the result—as we are sure you will be.

To understand your new vehicle fully, please take the time to read through this handbook and keep it in the vehicle at all times for quick reference.

Full understanding of your vehicle's performance, warranty and maintenance procedures will add greatly to your enjoyment.

On behalf of all here at GMH, may we wish you and your vehicle many years of Happy Motoring.

This handbook applies to all Rodeo KB models including Diesel, and explains all equipment including options. You may therefore find reference to some equipment not installed on your vehicle.

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When it comes to servicing, remember that a GMH Dealer has the trained personnel and specialised equipment to correctly service your vehicle.

For the proper maintenance and performance of the vehicle use only quality GM and AC Delco parts which are identified by one of these trademarks.

The use of parts, additives or treatments other than those marketed by GM or AC Delco may be detrimental to your vehicle and may void your New Vehicle Warranty.

All illustrations and specifications contained in this Handbook are based on the latest product information available at time of publication approval. The right is reserved to make changes at any time, without notice, in prices, colours, materials, equipment, specifications and models and to discontinue models. Check with your Holden Dealer for complete information.

Section 1
Getting to know your Rodeo

Important

Fuel requirements—Petrol

Your Rodeo is designed to run on standard grade fuel of at least 89 octane. Use of lower octane fuel will cause pre-ignition. If this occurs have your vehicle checked as it could damage your engine.

Diesel

If your Rodeo is equipped with a Diesel engine use a Diesel fuel of 45 Cetane rating minimum.

Running in

These days, there's no need to follow a rigid running-in schedule. However, if you observe a few simple points during the first few hundred kilometres of driving, you will add to the vehicle's future performance and economy.

For the first 500 kilometres, don't go over 80 km/h. Up to 1500 kilometres, avoid driving at any one speed—either slow or fast—for any length of time.

Include some higher speeds in your driving. This helps prolong the life of parts and helps with fuel and oil economy. But never drive at high speed until the engine is thoroughly warm.

Full throttle acceleration is not recommended before the car has done 3000 kilometres.

Diesel engines

We know you will be anxious to give your new Diesel a trial run, but wait just a minute! First, please be patient and read this handbook. Read it carefully, even if you have had a diesel equipped vehicle before. Make quite sure you haven't missed anything.

The diesel engine is quite simple and straightforward really, and it has a number of advantages which make it particularly suited for Road Vehicles. Most vehicle users nowadays are familiar enough with the petrol engine, and the diesel is no more complicated or difficult to understand than this. Yet there have been certain misconceptions about it, including the notion that the fuel injection pump is a "box of tricks"—it is not!

The diesel engine has neither carburettor nor electrical ignition system. The fuel injection equipment which takes their place is totally enclosed and weather-proof, and this in itself is one of the greatest advantages of the diesel—even if left out in all weathers, damp or rain will not affect starting.

Another false idea is that, because the diesel runs on fuel oil, it will operate on creosote, sump drainings or other waste products. It will not! Fuel oil, like petrol, is produced by the refineries to a definite specification, for use in high speed engines such as the one in your new vehicle. To use any fuel other than of the brands of the well-known companies is to ask for trouble. It is completely false economy, for consistent fuel quality and cleanliness are all-important in successful diesel operation.

The enemy of the diesel engine is dirt in the fuel

This point deserves further explanation.

The diesel is a hard-working engine that will give you long trouble-free service, as long as you keep the fuel really clean—not only free from large pieces of scale, sand or other dirt which the fuel filters or strainers will keep back, but free from dust, the fine dust which floats about in the air in dry weather. This fine dust is abrasive, and if it gets into the fuel it can cause rapid wear of the essential parts of the injection equipment. Your vehicle is fitted with a special filter which will prevent fine dust from passing into the pump—but let us explain why cleanliness is so important.

The fuel injection equipment comprises the injection pump itself, the injectors, and the filters. The pump and injectors are very carefully made, high-precision units, designed and built to perform a duty which is quite an arduous one. The pump is a sturdily built unit and has to supply the exact amount of fuel required to each cylinder—a droplet about the size of a pin's head for each firing stroke—and it operates at extremely high pressures. It has to inject hundreds of times a minute, and the amount of fuel must be under the instant control of the throttle or of the governor. The pump plungers are small and fit their housings perfectly—they

have surface finishes and fits of the finest standard obtainable by modern engineering methods. Since the pump operates in fuel oil, the wear of these precision parts is negligible and the pump will continue to do its work perfectly, unless dirt gets in. When that happens you can imagine the effect of fine grit on those beautifully polished surfaces, when the fuel pressure is something like 12,500 kPa.

The filter fitted between the fuel tank and the injection pump is provided to prevent this trouble. Gauze filters, however fine, are completely useless for diesel work, and a good filter is essential. The filter deserves a little special attention—we will mention it again later.

Now you will see how important it is to keep the fuel clean. Any abrasive dirt carried into the pump with the fuel will scuff and score the working parts— even the finest dust will damage the fine surfaces beyond repair. Worn components mean inefficient pumping, irregular deliveries to the various cylinders, bad running and poor starting.

The injector nozzles, too, can suffer damage from dirt or dust in the fuel. The nozzles, which spray the fuel into the combustion chambers, operate against very high compression pressures, and, like the pump plungers, are high precision jobs. To enable the nozzle to break up the small charge of fuel into a finely atomised spray so that it will mix thoroughly with the air compressed in the chamber and give good combustion, the holes in the nozzle are very small. A needle valve fits in the nozzle and closes it except while injection of the fuel is actually taking place. The needle must fit the nozzle and valve seat perfectly, and it is held to the seat by heavy spring pressure. A very small amount of fine grit or abrasive dust in the fuel can cause sufficient scuffing or wear to upset the nozzle entirely, causing knocking, uneven running and smoky exhaust.

Again, clean fuel is the answer. See that the engine gets clean fuel, and you won't have any trouble.

Now, what can you do to ensure that your fuel is clean, and stays clean? The only way that dirt can get into the fuel system of a vehicle in everyday use is through the fuel tank filler. It goes in with the fuel.

If you have to store your own fuel, storage tanks must be clean at the outset, and NOT galvanised. Fuel tanks must be covered so that dust and water cannot get in and scale will not form. The storage building should be clean and have a good floor. Take a pride in keeping the place spick and span—you will find it pays. If you are installing a new tank, talk to your fuel supplier who will give you good advice.

We recommend refuelling through a hose, the nozzle of which should be carefully wiped before use.

Should any fuel be spilt on tank or utensils when refuelling, wipe it up right away with a clean cotton rag, free from fluff. You see, fuel oil does not evaporate as petrol does and, if left, will gather dust and dirt from everywhere. Don't use cotton waste, the fluff from which will surely get into the fuel tank. *And be careful where you put down the fuel tank cap*—see that it does not pick up dust or grit. (This is perhaps the way that most dirt gets into the system.)

Cleanliness is the first care when refuelling

Some of these points may sound a little tedious—but start off right and take these sensible precautions every time—they soon become a habit and no trouble. You will be amply repaid in the service you get from your vehicle.

Now, in spite of all your care, a certain amount of dirt will get into the fuel. Look at any shaft of sunlight and see the countless dust particles floating in the air. To cope with this fine dirt, a small amount of which is unavoidable, the diesel engine is provided with a special fuel filter, situated in the fuel line between the fuel tank and the injection pump. The filtering element was formerly of fine cotton cloth or felt (in some cases these may still be in use), but the most efficient elements today are of a specially prepared paper. The paper element filter is now standard equipment on most vehicles. In scientifically conducted tests it gave up to six times the life of the injection pump than that obtained with the old type of filter.

Periodically, as dirt collects, it becomes necessary to service the fuel filter. For detailed instructions of the correct procedure, refer to page 00. We can give you a few "golden rules" about the job. It will be obvious that the cleaner the fuel is in the first place, the less chance there is of the filter becoming choked, it is not so much by solid impurities, as by waxy sludge which is present to a varying degree in all fuels, no matter how clean. The life of the filter element depends therefore on the amount of fuel passed through it, and on the particular grade of fuel used—some fuels in some conditions are more prone to waxy deposits then others. **Systematic checking and cleaning of the fuel system at the recommended intervals can prevent malfunction caused by plugged (blocked) or burnt injector nozzles and may obviate premature injector overhaul or replacements.**

The factors which affect the performance of diesel engine injectors vary so much that it is impossible to quote a service interval that will meet all conditions, but it is recommended that the intervals should not exceed 6 months or 10,000 kilometres.

Depending on the operating conditions, the cleanliness and quality of the fuel, and the condition of the engine, the injectors may require servicing at more frequent intervals.

The fuel pump and the injector nozzles, will continue to work properly for very long periods as long as they are supplied with clean suitable fuel. As long as they are working properly, leave them alone. The overhaul, maintenance and adjustment of injection pumps and nozzles is a specialised job, requiring special tools and test equipment, and should be carried out by a trained service engineer. Once again, this Owner Handbook is your best guide.

Finally, may we repeat—keep the fuel clean and your fuel injection equipment will give you trouble-free service. If the fuel pump and nozzles do not appear to be working properly, see your GMH Dealer.

Your new vehicle will be fitted with the usual electrical equipment: a battery, starter, alternator-regulator and lighting equipment etc.

A few elementary points about the electrical equipment may help. First, the same sound general principle—keep it clean! This will go a long way towards avoiding trouble. Read this Owner Handbook carefully; it will tell you what should be done and when attention may be necessary.

A diesel engine takes quite a bit of turning over for starting because it has a very high cylinder compression, and this is one good reason for keeping the electrical equipment in good order.

Let us begin with the alternator: it must be able to charge the battery properly or it will soon be "flat" as starting imposes a very heavy load on the battery.

Make sure that all electrical connections are clean and tight. A smear of petroleum

jelly on the connections will prevent corrosion.

Make sure that fuel oil is not spilled over the alternator when adjustments are made to the fuel pump or it may cause an electrical breakdown. Remember, prevention is better than cure.

The introduction of alternators, has brought about the necessity for you to ensure that these products are not damaged by reversing electrical connections.

As the battery negative lead is connected to earth, care must be taken to ensure that the battery is always connected correctly. This is known as the negative earth system.

Also it is most important to remove the battery leads when charging a battery, as it only requires a fraction of a second of reverse polarity to completely ruin semiconductor equipment.

With the electric starter there is one very important point which must be emphasised—NEVER turn the ignition switch to "start" position while the engine is running. This could cause considerable damage and put the starter out of commission.

Please read the Battery section of this Owner Handbook very carefully.

How a diesel engine works

The diesel or compression-ignition engine resembles the petrol engine more closely than any other type. It is another form of the reciprocating internal combustion engine. The diesel is widely employed in commercial vehicles, ships, railway engines and as yet to a lesser degree in cars and light commercial vehicles.

In the diesel engine, only air enters the cylinder on the intake stroke and this air is compressed on the compression stroke. Compression ratios range from 16:1 to 25:1. This produces pressures of about 40 kg/cm^2 at the top of the compression stroke. When air is rapidly compressed to this pressure it reaches a temperature of about 550°C. This is sufficient to ignite the fuel oil which is sprayed into the heated air. No separate ignition system is required because the oil is ignited by the heat created by compressing the air. The fuel used is closely related to petrol, but it is a heavier type of hydrocarbon.

Just prior to the top of the compression stroke, a precisely measured amount of fuel is injected into the combustion chamber in the form of a fine spray, at a pressure of 12,500 kPa. It ignites instantly and continues to burn as long as fuel is sprayed into the combustion chamber. The expanding gases force the piston down on the power stroke and they are expelled on the exhaust stroke.

The compression-ignition engine is considerably more economical to operate than a petrol engine because the high compression ratio assures better thermal efficiency.

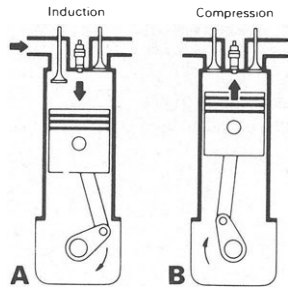
In the petrol engine, where a mixture of air and fuel is compressed, the highest allowable compression ratio is about 10:1 with commercially available fuel. When the compression ratio is increased over 10:1 knocking results.

On the other hand, the diesel engine requires a much higher compression ratio to generate the high temperatures needed for fuel ignition. This creates better thermal efficiency.

How a diesel engine works

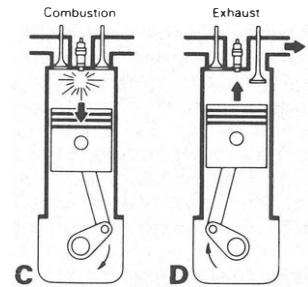
A With the diesel fuel injection system, air is inducted into the cylinder by the piston moving down.

B The air is then compressed at a ratio of about 20.0:1.



C The fuel injection nozzle injects the diesel fuel into the cylinder. With the highly compressed air, combustion then takes place.

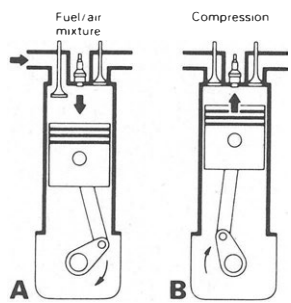
D Exhausted gases are then expelled.



How a petrol engine works

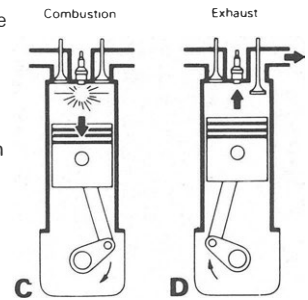
A The petrol and air mixture is fed into the combustion chamber through the carburettor.

B The petrol/air mixture is then compressed at a ratio of about 8.5:1.



C The spark plug, fired by the electrical system, ignites petrol/air mixture for combustion.

D The exhaust gases are then expelled.



Why a diesel engine needs pre-heating

As mentioned earlier, a diesel runs on compressed air and fuel oil. As the air is compressed in the cylinder, it heats up. When the cylinder is already warm a diesel will start quickly, but when the cylinder is cold, starting takes a few seconds longer. As it is impossible to raise the air temperature in the cylinder to starting temperature by compression alone the diesel uses a heater or glow plug to raise it high enough for starting.

Diesel fuel: Diesel fuel will ignite at temperatures of 320-350° Centigrade without any electric starting devices.

Petrol: Petrol ignites at temperatures of 600-650° Centigrade, and ignition is achieved through an electric current fed into the combustion chambers via sparking plugs.

Diesel's fuel economy

The diesel's better fuel economy owes much to the engine's high compression ratio, more than double that of a petrol engine. In other words, the diesel burns fuel more efficiently than a petrol engine. The higher compression ratio burns fuel more quickly increasing the temperature inside the combustion chamber which in turn generates more power.

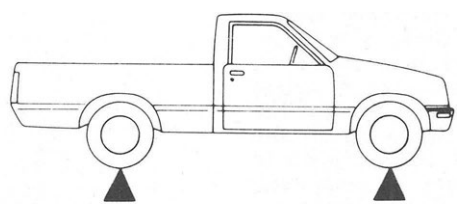
Important information on vehicle loading

Overloading

Safety Caution:

The components of your Holden Rodeo are designed to provide satisfactory service if the truck is not loaded in excess of either the Gross Vehicle Mass Rating (GVMR) or the Maximum Front and Rear Gross Axle Mass Ratings (GAMR's) specified in the chart.

MODEL DESIGNATION	MAXIMUM GVMR	REAR GAMR	FRONT GAMR
KB 28	2350 kg	1600 kg	850 kg
KB 28Y	2350 kg	1600 kg	850 kg
KB 28W	2250 kg	1600 kg	850 kg
KB 28LS	1800 kg	950 kg	850 kg
KBD 27	2350 kg	1600 kg	850 kg
KBD 27Y	2350 kg	1600 kg	850 kg
KBD 27W	2250 kg	1600 kg	850 kg
KB 43LS	1800 kg	950 kg	950 kg
KB 43Y	2350 kg*	1590 kg	950 kg
KB 48W	2250 kg*	1590 kg	950 kg
KBD 42Y	2350 kg* *2100 kg In Rough Terrain Use.	1590 kg	950 kg



Overloading can create serious potential safety hazards and can also shorten the service life of your truck. Your local GMH dealer can advise you concerning proper loading conditions of your Rodeo.

GVMR (Gross Vehicle Mass Rating)

"Gross Vehicle MASS Rating" means the maximum load carrying capacity of the truck, including the truck itself, all items added to the truck after it has left the factory such as bodies, winches, booms, etc., the driver, all occupants, and everything that is loaded into (or onto) the truck. The GVM rating represents the weight of that complete vehicle, taking into consideration the engine, transmission, frame, spring and tyre capabilities.

Maximum front and rear axle mass

The mass of the payload must be properly distributed over both the front and rear axles, although not necessarily evenly. The front or rear "Gross Axle Mass Rating" means the maximum weight that the front or rear axle can carry. Actual front and rear end mass at the ground can only be determined by weighing the vehicle. This can be accomplished at highway weigh stations, or other such commercial facilities. For assistance in this regard, consult your GMH dealer. Care should also be exercised to see that the payload is distributed on both sides of the centreline of the truck as equally as possible.

Tyres

It is important that the tyres on your truck are of the proper size, and be properly inflated, for the load which you are carrying. It is important to avoid over-inflation as well as under-inflation. The "Tyre Inflation Table" in the Service and Maintenance section of this manual provides inflation pressure information.

CAUTION: When using your vehicle to transport luggage or other cargo, it is recommended that the articles be secured in place. This precaution will help prevent such items from becoming projectiles in the event of an accident.

Running in a new vehicle

Future performance and service life of your vehicle are under the direct influence of care and treatment that your vehicle will receive during the initial running in period. It is therefore, recommended that, during the first 1,000 km (600 miles) of break-in period, the following few simple precautions be carefully observed.

- It is recommended that your speed during the first 1,000 km (600 miles) of break-in period be confined to a maximum of 100 km/h (60 miles); petrol engine and 85 km/h (50 mph); diesel engine.
- Avoid engine racing, abrupt starting and needless hard stops, except in an emergency.
- Always let the engine idle until it reaches normal operating temperature.
- Avoid overloading.
- Confine your speed to the following recommendations.

4 x 2 Models **Max. allowable speed during break-in period**

	Model	1st gear	2nd gear	3rd gear	4th gear	5th gear* (where fitted)
First 1,000 km (600 miles)	Model with Petrol Engine	25 km/h (15 mph)	40 km/h (25 mph)	70 km/h (45 mph)	100 km/h (60 mph)	100 km/h (60 mph)
	Model with Diesel Engine	20 km/h (10 mph)	30 km/h (15 mph)	50 km/h (30 mph)	85 km/h (50 mph)	85 km/h (60 mph)

* Do not labour engine in 5th gear.
Only use on long flat and downhill running.

4 x 4 Models

	Model	Transfer Position	1st gear	2nd gear	3rd gear	4th gear
First 1,000 km (600 miles)	Model with Petrol Engine	2H, 4H	25 km/h (15 mph)	40 km/h (25 mph)	70 km/h (45 mph)	100 km/h (60 mph)
		4L	13 km/h (8 mph)	20 km/h (10 mph)	35 km/h (20 mph)	55 km/h (35 mph)
	Model with Diesel Engine	2H, 4H	20 km/h (10 mph)	30 km/h (15 mph)	50 km/h (30 mph)	85 km/h (50 mph)
		4L	10 km/h (5 mph)	15 km/h (10 mph)	25 km/h (15 mph)	45 km/h (30 mph)

Safe driving hints

Important

These items are listed as a safety reminder to you. The appropriate section of this handbook should be referred to for a more detailed explanation.

Carbon monoxide

Avoid inhaling exhaust gases because they contain carbon monoxide, which is colourless and odourless. Carbon monoxide is a dangerous gas that can cause unconsciousness and is potentially lethal.

Seat belts

Various road laws require the wearing of seat belts. It is important that the habit of using these should be developed by yourself and others in the vehicle. In the interest of safety seat belts should be checked regularly. Your Dealer will inspect and check the belts for you as part of the normal Maintenance Service. Never attempt to modify or change the seat belt away from the original specification as this will affect the operation of the belts and reduce their effectiveness, in preventing injury, in an accident.

Anti-theft ignition steering lock

DO NOT turn the ignition switch away from the ON position while the vehicle is in motion as this renders ineffective any power assisted equipment fitted to your vehicle.

Never remove the key while the vehicle is in motion as this will lock the steering of the vehicle and render it inoperative.

Brakes

Driving through water may affect performance. Applying the brakes lightly will indicate whether they have been affected. To dry them quickly, lightly apply the brakes while maintaining a slow forward speed with an assured clear distance ahead until brake performance returns to normal.

Brake pedal travel should not be obstructed by improper floor mats or other interfering material under the pedal which causes interference with normal pedal movement.

Also your seat should be positioned so that your feet can rest on the floor under the pedals.

Power assisted brakes

Power assisted brakes which are fitted to your Rodeo utilise vacuum from the engine when it is running. Never let the vehicle run down steep grades without the engine running. **Never** coast with the engine switched off.

Loose articles

Do not leave a loose load or articles inside the passenger compartment. Stow articles in the luggage compartment and tie down if necessary.

Petrol fumes

Always stop the engine and do not smoke or allow open flames or sparks near the vehicle when refuelling. If petrol fumes are noticed while driving, the cause should be determined and corrected without delay.

Parking

When leaving your vehicle unattended:

1. Apply the parking brake. (Refer to page 37).
2. Place transmission selector in: Reverse—Manual trans. Park—Automatic trans.
3. Turn key to LOCK position and remove key.
4. Shut windows and lock all doors.

Tyre traction

A decrease in driving, cornering, and braking traction occurs when water, snow, ice, gravel, or other material is on the road surface. Driving practices and vehicle speed should be adjusted to the road conditions.

Cooling system

If the cooling system is hot, the radiator cap **must not** be removed quickly—it should be rotated slowly to the first stop, which permits the pressure to release slowly through the overflow pipe. Before doing this cover the cap with an old rag or cloth to avoid possible scalding.

Maintenance for safety

The following items require regular attention in the interests of safety. If anything goes wrong with any one of them, an authorised GMH Dealer will help you.

- BRAKES.
- HORN.
- ALL LIGHTS.
- REAR VISION MIRRORS.
- SEAT BELTS.
- GLASS AREAS.
- EXHAUST SYSTEM.
- WINDOWS.
- STEERING AND WHEEL ALIGNMENT.
- WINDSHIELD WIPERS & WASHERS.
- TYRES.
- SUSPENSION.

Before driving your vehicle

Driver checklist

Before entering vehicle

1. See that windows, mirrors and lights are clean.
2. Visually note inflation condition of tyres.
3. Check that area to rear is clear if about to back up.
4. Check that all lights work.
5. Look for fluid leaks.

Before Driving Off

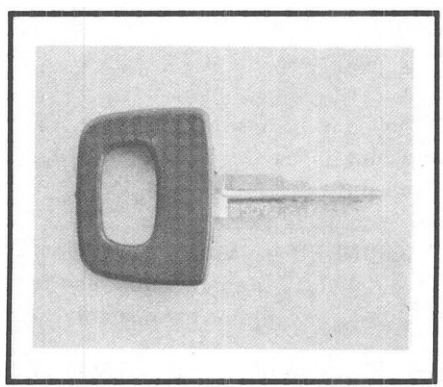
1. Lock all doors.
2. Adjust the seat.
3. Adjust inside and outside mirrors.
4. Fasten seat belts.
5. Check that warning lights work as key is turned to "ON"
6. Check all gauges.
7. Release parking brake and see that "Brake" light turns off.
8. Be sure you understand your vehicle and how to operate it safely.

Operation of controls

Keys

The code number of each key is stamped on the key. Record the key numbers and keep the numbers in a safe place such as your wallet, NOT IN THE VEHICLE.

In the event the original keys are lost, duplicates can be made by your dealer using the key code information.

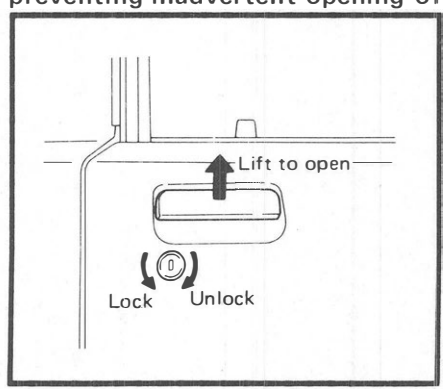


Door locks

Doors may be locked from outside the vehicle by inserting the ignition key into the door key lock and turning. To unlock, turn in the counterclockwise direction for the left door; clockwise for the right door. Reverse direction to lock. To lock doors from inside the vehicle, push lock button down. To open the door from inside, unlock the knob and pull the inside handle.

The doors can also be locked from outside without using the ignition key by pushing in on the lock knob and closing the door with the door outside handle pulled.

As a standard safety feature, the doors have overriding door locks. When the lock is locked, the door latch mechanism is inoperative, preventing inadvertent opening of



the door by movement of the inside handle.

The KB series equipped with pickup body, have a lockable fuel filler door which can be unlocked, with the ignition key. After refuelling check to be sure the fuel filler cap is locked properly.

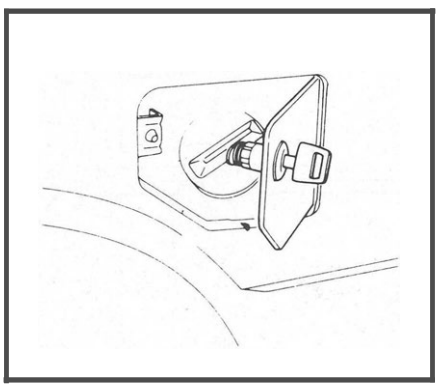
Seats

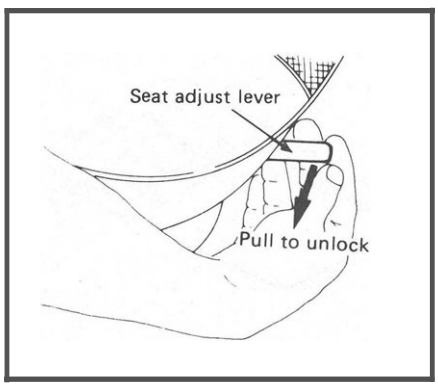
The entire seat assembly can be moved forward or rearward for the most comfortable position. Pull sideways on the lever, located at the front right end (or left end) of the seat, to release the seat adjuster lock so the seat assembly can be moved forward or rearward as desired.

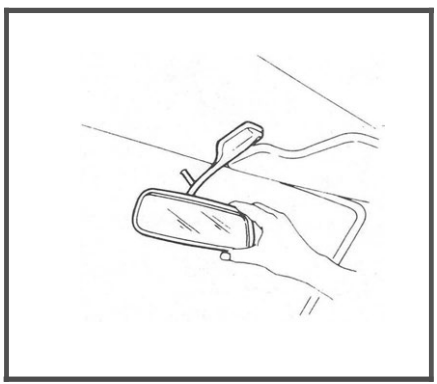
CAUTION: Do not adjust a manually operated driver's seat while the vehicle is moving—the seat could move unexpectedly, causing loss of control.

Inside rearview mirror

To raise or lower, grasp mirror and exert sufficient pressure by pushing or pulling to move up or down.







Glare proofed internal rear view mirror (where fitted)

Day time: Drive with lever pushed down.

At night: Drive with lever up, so that the glare proofed mirror protects your eyes against light from vehicles behind.

Dome Light (where fitted)

The dome light is operative at any starter switch position.

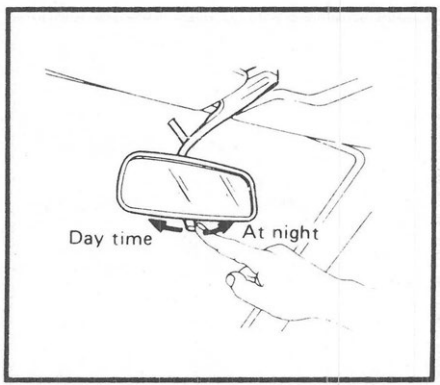
"OFF" The light remains out.

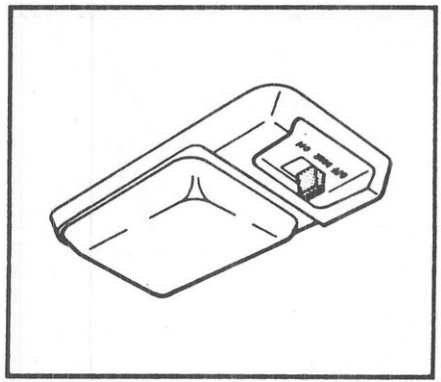
"DOOR" The light turns on when either front door is opened.

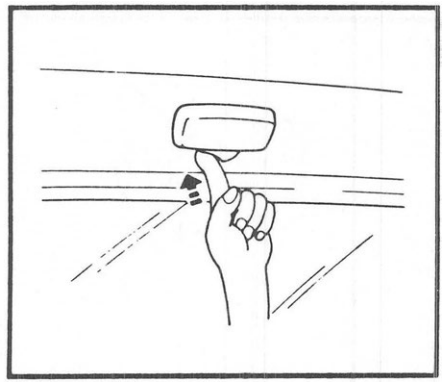
"ON" The light turns on regardless of the door position.

Dome Light

The switch is built into the light housing and has ON and OFF positions.







Seat belts

Releasing belts

To release all belts, simply depress the release button located in the centre of the buckle.

Care of seat belts

Keep the belts clean and dry. Clean with a mild soap solution and lukewarm water. Keep sharp edges and damaging objects away from the belts.

Periodically, inspect the belts, buckles and anchorage points. Damage or fraying that could lessen the effectiveness of the system should be eliminated by replacing the belt assemblies. Do not bleach or dye the belts since this can cause severe loss of strength as also will contamination of the webbing with polishes, oils or chemicals—particularly battery acid.

Using seat belts

Various road laws require the wearing of seat belts. It is important that the habit of using these should be developed by yourself and others using the vehicle.

The adjustment and operating instructions are detailed in this Section together with the Seat Adjustment it being important that both positions be comfortable in order that the driver may devote his entire attention to the job of driving and observing the road.

IMPORTANT: Don't use belts that are twisted—untwist them before making any adjustments and be sure that they contour around the body comfortably when adjustments are complete.

(Refer to the following pages for important instructions.)

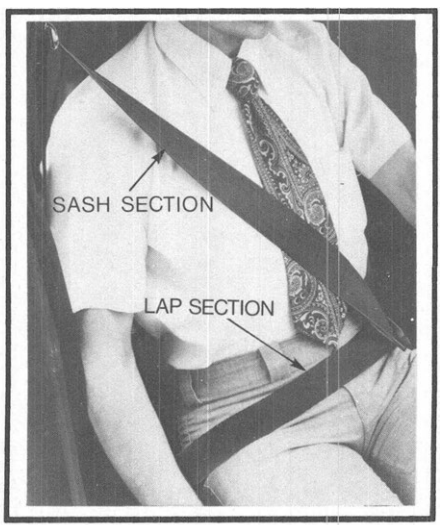
Lap/sash combination belt

A firm, low position across the pelvis by the lap section of the Lap/Sash Combination Belt is essential in order that the force exerted by the Lap Belt in a collision may be spread over the strong hip bone structure and not across the soft abdominal area.

Emergency locking retractor type

This type of seat belt allows the wearer to move bodily while the seat belt is fastened. It is also dual sensitive.

The first way the locking mechanism is activated is by sudden changes of vehicle speed or vehicle direction, as in the case of firm brake application or vehicle impact during an accident. This phase of the retractor mechanism's operation can be tested by allowing the body to be restrained only by the belt during firm application of the vehicle brakes, at between 2-5 km/h (brisk walking speed) under safe conditions.



The belt should lock immediately, stopping all belt movement. The second way the locking mechanism is activated is by a sudden extension of the belt from the retractor housing. This phase of the retractor mechanism's operation can be tested by holding the belt tightly and giving it a sudden firm jerk. The retractor mechanism should lock immediately, stopping all belt movement.

These checks should be carried out regularly.

WARNING: No modification or additions should be made by the user which will either prevent the seat belt adjusting devices from operating to remove slack, or prevent the seat belt assembly from being adjusted to remove slack.

Tongue restrictor

This belt system incorporates a tongue restrictor which can be moved along the belt to locate and hold the tongue in any desired position.

WARNING: The positioning of the tongue restrictor must never interfere with or stop the belt from fully retracting.

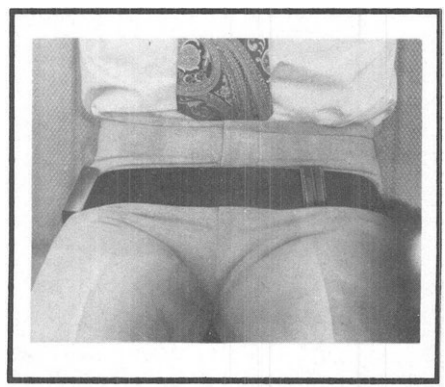
Belt adjustment

1. Adopt a satisfactory seating position.
2. Bring the metal tongue across the body and snap home the Tongue into the Buckle.
3. After fastening, settle the belt by running a hand under the belt, starting at the outer hip area, then across to the tongue and up the sash section. This will feed back unwanted belt length to the retractor.
4. Finally check the fit and adjustment.

Lap type belts

Belt adjustment

1. Adopt a satisfactory seating position.
2. Bring the Tongue Adjuster across the body and snap home the Tongue into the Buckle.
3. Adjust the belt to obtain a firm fit. A firm low position across the pelvis is essential in order that the force exerted by the lap belt in a collision may be spread over the strong hip bone structure and not across the soft abdominal area.



To Lengthen—Tilt the Tongue Adjuster and pull the belt to the right of the finger grip bar.

To Shorten—Tilt the Tongue Adjuster and use the serrated Finger Grip Bar to pull the belt through the Tongue Adjuster.

CHILDREN ABLE TO SIT UP should be belted with the regular seat belt. If the sash part rubs on the child's neck or face, move the child towards the centre of the vehicle. NEVER allow a child to stand or kneel on any seat.

Where children are carried without a child restraint if the seating position of the child is to be raised this is to be done only by means of a support which is retained by the seat belt.

ON NO ACCOUNT SHOULD A LOOSE CUSHION BE USED. THIS COULD RESULT IN SERIOUS INJURY IN THE CASE OF VEHICLE COLLISION.

The GM Child Love Seat is designed for children weighing 9 to 19 kg, up to 1 metre in height, who are able to sit up alone.

Belt stowage

When not in use the belts should be kept with the tongue latched into the appropriate buckle.

AUSTRALIAN DESIGN RULES:

WARNINGS

Seat belts are designed to bear upon the bony structure of the body, and should be worn low across the front of the pelvis, or the pelvis, chest and shoulders, as applicable; wearing the lap section of the belt across the abdominal area must be avoided.

Seat belts should be adjusted as firmly as possible, consistent with comfort, to provide the protection for which they have been designed. A slack belt will greatly reduce the protection afforded to the wearer.

Care should be taken to avoid contamination of the webbing with polishes, oils and chemicals, and particularly battery acid. Cleaning may safely be carried out using mild soap and water. The belt should be replaced if webbing becomes frayed, contaminated or damaged.

It is essential to replace the entire assembly after it has been worn in a severe impact even if damage to the assembly is not obvious.

Belts should not be worn with straps twisted.

Each seat belt assembly must only be used by one occupant; it is dangerous to put a belt around a child being carried on the occupant's lap.

No modifications or additions should be made by the user which will either prevent the seat belt adjusting devices from operating to remove slack, or prevent the seat belt assembly from being adjusted to remove slack.

The positioning of the tongue restrictor must never interfere with or stop the belt from fully retracting.

Section 2
Starting and operating

Exhaust gas warning

Carbon monoxide poisoning

Exhaust gases contain carbon monoxide which can cause unconsciousness and even death.

You could breathe the gases in if the exhaust system on your vehicle is faulty.

Have the vehicle checked thoroughly each time it is serviced. If you notice a change in exhaust noise, or if the back of your vehicle is damaged, take it to your GMH Dealer for inspection.

If you must drive with a faulty exhaust, drive with all the windows open.

Danger

Don't ever sit in a parked vehicle with the engine running for any length of time.

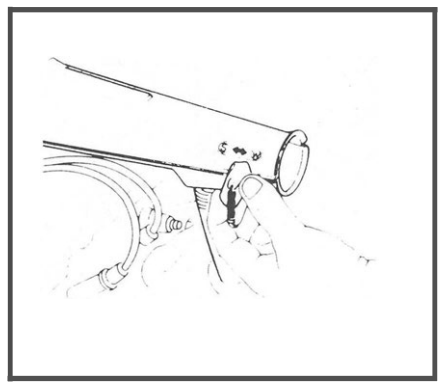
Don't run the engine in the garage any more than necessary to move the vehicle.

If this should be necessary—say for an engine check—ventilate the vehicle by closing the heat or flow through ventilation outlets and turning the fan on to 3.

Hot air intake system (Petrol engine)

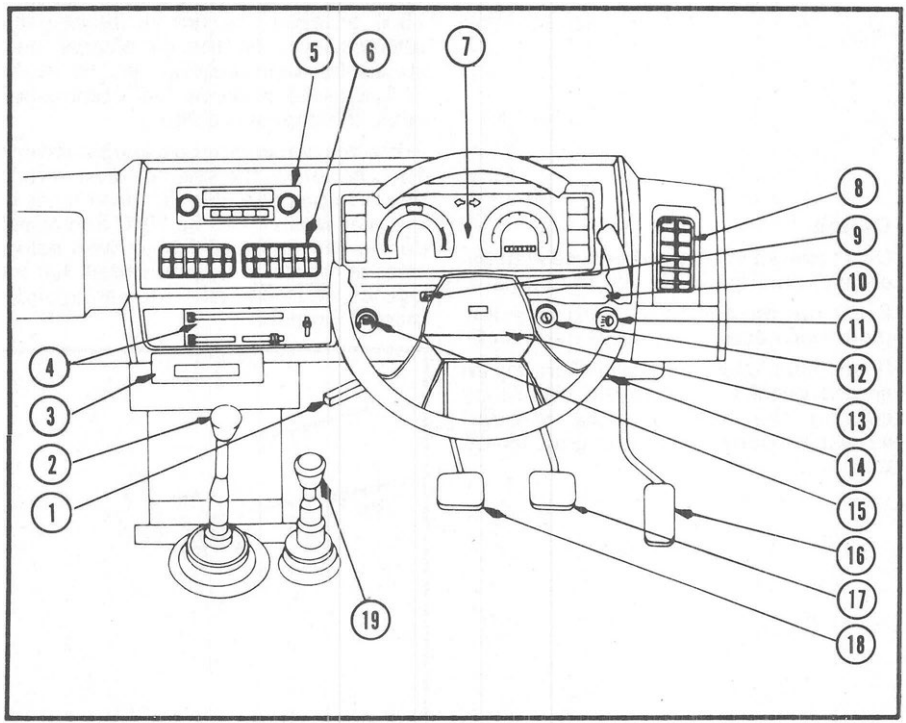
When the ambient temperature is around 15°C or lower, the hot air intake valve selector lever on the air cleaner duct should be set in position "W" for intake of hot air to improve fuel combustion while the engine is cold.

When the ambient temperature is around 15°C or above, the selector lever should be set to position "S". At those times of the year when it can be 15°C and above during the day and fall to well below 15°C at night it is recommended that the lever be left at "W" when operating under these conditions.



Starting and operating

Controls



1. Parking brake lever
2. Transmission gearshift lever
3. Ash tray
4. Heating & ventilation controls
5. Radio
6. Centre ventilator grille
7. Instrument & warning light panel
8. Side ventilator grille
9. Four-way Hazard warning flasher switch
10. Turn signal switch, Windshield wiper and washer switch
11. Light switch
12. Starter switch
13. Horn button
14. Steering wheel
15. Idling control button (Diesel)
16. Accelerator pedal
17. Brake pedal
18. Clutch pedal
19. Transfer gearshift lever (4 x 4 model only)

Starter switch

The starter switch has five positions as shown.

LOCK : The key may be inserted and removed only when the switch is in this position.

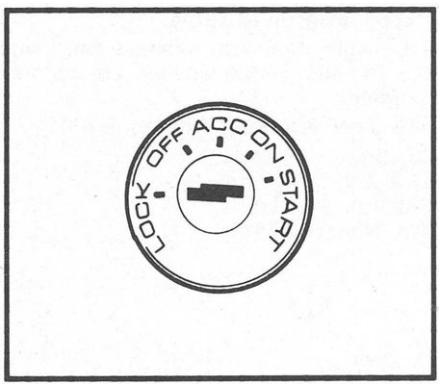
OFF : The engine will stop with switch in this position.

ACC : With the switch to this position, electrical circuit for accessories are energized.

ON : Switch in this position for driving.

START : Moving the key into this position will start the engine. Releasing the key will allow it to return to **ON** position.

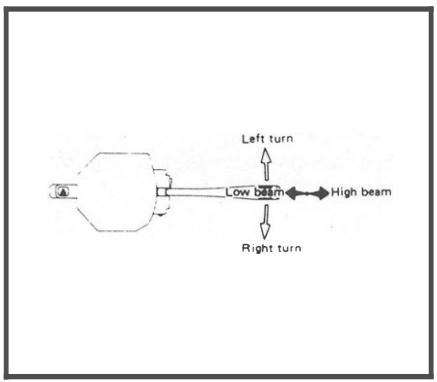
NOTE: **Do not keep the starter engaged for more than 15 seconds (Petrol Engine) or 30 seconds (Diesel Engine).**



Headlight beam switch lever (combination turn signal switch lever) and indicator light

The hand operated switch located on the right side of the steering column, is used to change the headlamp beam from high to low or low to high. Each time the lever is moved, the light beam changes. A headlamp beam indicator, on the face of the instrument panel, lights up when the headlamps are on high beam.

Move the lever rearward (toward the steering wheel) for low beam and forward (away from the steering wheel) for high beam.



Passing signal

To operate the high beam regardless of the light switch position, move the lever toward the steering wheel beyond the low beam position. The lever returns to the low beam position when released.

To give the traffic ahead a signal of overtaking, operate the lever repeatedly.

The headlamp circuits are protected by the automatic re-set circuit breaker.

Turn signals

The lever which controls the turn signal switch (combination headlight beam control switch lever) is located on the right side of the steering column immediately under the steering wheel. The lever is moved upward to signal a left turn and downward to signal a right turn. Lamps on the front and rear of the vehicle transmit this signal to other motorists and pedestrians.

In a normal turning situation such as turning a corner, the turn signal is cancelled automatically after the turn is completed. However, in some driving manoeuvres, such as changing lanes on an expressway, the steering wheel is not turned back sufficiently after completing the turn to automatically cancel the turn signal. In such manoeuvres the driver should return the lever to the neutral or cancelled position when the turn is completed.

A green light on the centre part of the instrument panel flashes to indicate proper operation of the right and left turn signal lamps. If the indicator lamp remains on and does not flash, check for a defective signal lamp bulb. If the indicator fails to light when the lever is moved, check the fuse and indicator bulb.

Lane change signal

For convenience, such as changing lanes, you can flash the turn signal by moving the lever part way (to the first stop) and holding it there. The lever will return to the horizontal when you release it.

Starting and driving precautions

Shifting precautions

CAUTION: On a diesel engine model, a caution label-speed range is attached to the front part of door inside panel on the driver side. For best results, it is strongly advisable to confine your speed in each gear to the limit recommended in the caution label-speed range.

- Always start in low gear, avoid racing the engine.
- Shift to next lowest gear for extremely hard pulls at low road speed.
- Do not over speed engine when shifting down to next lower gear.
- Use third gear at slow speeds (less than 50 km/h) when driving in stop-and-go traffic for improved vehicle performance during acceleration and when descending steep grades.
- Never shift into reverse gear until vehicle is completely stopped.
- Confine your speed to the following recommendations.
- For normal acceleration, follow the following steps.

4 × 2 Models

Shift into second gear at about 15 km/h, into third gear at about 30 km/h and into fourth gear at about 50 km/h.

Use fifth gear (if fitted) for highway cruising above 75 km/h. Do not continue to use fifth gear where large throttle openings or full throttle is necessary (except momentarily) as poor fuel economy will result.

4 × 4 Models

In 2H or 4H, shift into second gear at about 15 km/h, into third gear at about 30 km/h and into top gear at about 50 km/h.

In 4L, shift into second gear at about 8 km/h, into third gear at about 16 km/h and into top gear at about 27 km/h.

IMPORTANT:
Petrol Engine Models.

To ensure minimum exhaust emissions the following shift speeds are recommended:

(4 x 2 Models, 4 x 4 Models in 4H)

1st-2nd — 15 km/h.
2nd-3rd — 30 km/h.
3rd-4th — 50 km/h.
4th-5th — 60 km/h.

4 x 2 Models	Maximum Allowable Speed in Gear:	
Transmission Gear Position	Petrol Engine	Diesel Engine
1st gear	30 km/h	25 km/h
2nd gear	50 km/h	40 km/h
3rd gear	90 km/h	75 km/h

4 x 4 Models			
Transmission Gear Position	Transfer Position	Petrol Engine	Diesel Engine
1st gear	2H, 4H	30 km/h	25 km/h
	4L	16 km/h	13 km/h
2nd gear	2H, 4H	50 km/h	40 km/h
	4L	26 km/h	22 km/h
3rd gear	2H, 4H	90 km/h	75 km/h
	4L	48 km/h	40 km/h

Clutch Operation

- Do not ride clutch pedal; this produces a partly disengaged condition that will result in damage to your clutch.
- When stopped on an upgrade, do not hold truck with engine. Use service brake.

Starting the engine

1. Apply the parking brake.
2. Place transmission in neutral and hold clutch pedal to the floor throughout the starting procedure. (Select the proper gear position before releasing the clutch pedal. See "Starting and Driving Precautions".)
3. Depress accelerator pedal and activate starter as outlined below for different conditions.
4. Start engine as outlined below for different conditions.

Normal Weather—Above about 0°C (Petrol Engine)

1. With the key turn the starter switch clockwise, checking to see if the oil pressure indicator light and generator indicator light turn on.
2. Crank the engine by turning the starter switch fully clockwise. Release the key as soon as the engine starts. The starter switch will return automatically to "ON" position.
3. When the engine starts, depress the accelerator pedal part way down and check to be sure that the oil pressure indicator light and generator indicator light go out.

(Diesel Engine)

1. Turn the starter key to ON position. Checking to see if the oil pressure indicator light, generator indicator light, filter indicator light and glow plug indicator light turn on.
2. As soon as the glow plug indicator light has gone off, fully depress the accelerator pedal and clutch pedal to start the engine.
3. Crank the engine by turning the starter switch fully clockwise. Release the key as soon as the engine starts. The starter switch will return automatically to ON position.
4. When the engine starts, depress the accelerator pedal part way down and check to be sure that the oil pressure indicator light and generator indicator light go out.
   If necessary to achieve a smooth idle, turn the idling control button to clockwise until the engine reaches normal operating temperature. Turn the idling control button to home position after the engine has thoroughly warmed up.

Cold Weather—Below about 0°C, or after vehicle has been standing idle for several days.

(Petrol Engine)

1. Pump the accelerator pedal 2 to 3 times and release it.
2. Depress the clutch pedal all the way to floor, hold and crank the engine by turning the starter switch fully clockwise.
3. When the engine starts, allow it to run at fast idle setting in NEUTRAL for approximately 20 to 30 seconds to facilitate warming-up.

NOTE: If the engine does not start due to carburettor flooding, continue to operate the starting motor with the accelerator pedal depressed to floor.

(Diesel Engine)

To start, follow the steps applied for starting cold engine under normal weather.

Hot Engine

1. Depress accelerator pedal slowly, and hold it to floor, turn the starter switch clockwise—release when engine starts.
2. After starting the engine, release accelerator pedal.

If the engine fails to start with initial cranking

IMPORTANT: Do not keep the starter engaged for more than 15 seconds (Petrol Engine) or 30 seconds (Diesel Engine) at a time. Wait 30 seconds and try again.

NOTE: If the starting motor has been operated continuously but the engine did not start, allow 30 seconds before attempting to restart.

If the engine fails to start with repeated cranking, check fuel system and electrical system.

Stopping the engine

Turn the starter switch to OFF position.

NOTE OIL PRESSURE INDICATOR LIGHT AND/OR GENERATOR INDICATOR LIGHT

Generator light should be off unless engine is idling slowly. The oil pressure indicator light should go out. Be certain light is off before continuing; if still on, stop engine and determine fault.

CHECK TEMPERATURE GAUGE

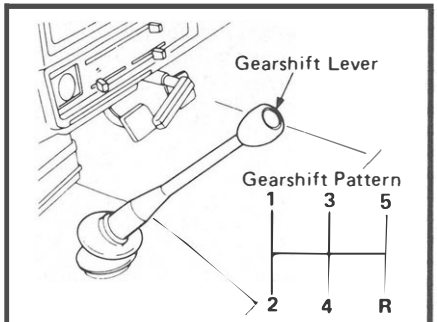
If the needle moves to the "H" hot end of the gauge, stop the engine until the cause of overheating is determined.

Manual transmission

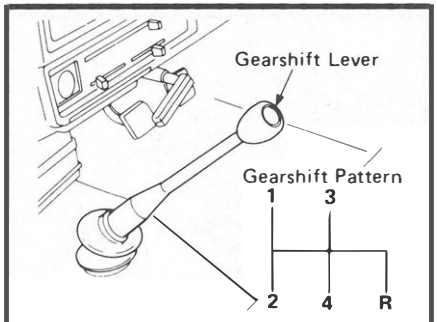
REMINDER: Before descending a steep or long grade, down a mountain or hillside, reduce speed and shift into a lower gear. Under such conditions, use the brakes sparingly to prevent them from overheating which reduces brake effectiveness.

Gearshift lever

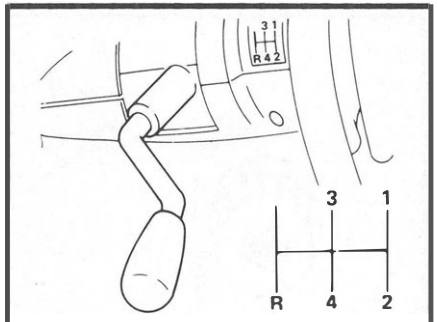
The transmission has fully-synchronised four or five forward speeds. The gearshift pattern is provided on the left side face of the steering column behind the steering wheel. (On floor shift control model, the gearshift pattern is provided on the shiftlever knob.) The back-up lights turn on when shifted into reverse gear.



5 Speed



4 Speed Floor Shift



Column Shift

Idling Control Knob—Diesel

Turning the knob clockwise (in direction of arrow) after cold starting of the engine will increase idling speed hereby facilitating quick normalization of the engine. Always drive with the button returned to home position. (See engine starting procedure.)

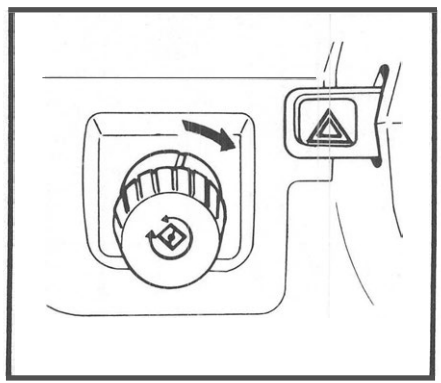
Part time four wheel drive (4 x 4 Models)

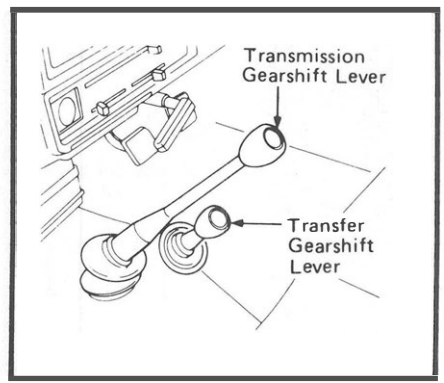
Transfer case operation

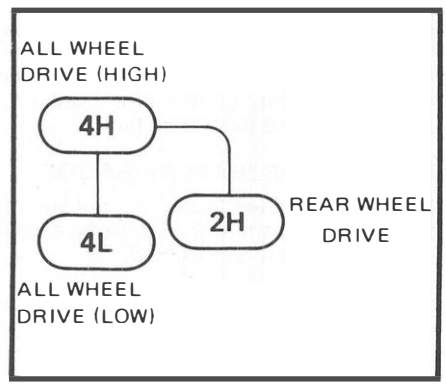
The transfer case for conventional (Part-time) four wheel drive vehicles provides that the driver may select two wheel or four wheel drive by shifting the Transfer Gearshift Lever.

The transfer shift lever positions that appear on the shift lever knob are shown below.

Note: When the lever is in the 4H or 4L position the 4WD indicator light on the instrument panel will glow.







TRANSMISSION RANGE SHIFT PATTERN

AUTO LOCKING FRONT HUB 4X4

TRANSFER CASE SHIFT CONTROL

2H — HIGH RANGE — NORMAL TWO WHEEL DRIVE

4H — HIGH RANGE — ALL FOUR WHEELS DRIVING

4L — LOW RANGE — ALL FOUR WHEELS DRIVING

4L AND 4H FOR LOW TRACTION CONDITION ONLY (MUD, SNOW OR SAND). NOT RECOMMENDED FOR DRY PAVEMENT.

THE TYRES SHOULD BE INFLATED TO RECOMMENDED PRESSURE WHEN USING FOUR WHEEL DRIVE. IT IS NOT ADVISABLE TO USE DIFFERENT SIZE TYRES ON THE FRONT AND REAR AS IT CAN CAUSE NOT ONLY PREMATURE WEAR OF TYRE TREAD BUT ALSO CAUSES TROUBLES DUE TO UNDUE STRESSES IMPOSED ON THE DRIVE TRAIN.

AUTOMATIC LOCKING HUB

With this equipment, 'lock to free' and vice versa can be made by just operating the transfer shift lever in the cabin without alighting from the vehicle.

TO LOCK

1. Stop the vehicle.
2. Shift transfer lever to 4H or 4L.
3. Start the vehicle. This automatically locks the hubs.
4. Once the hubs have been locked, they will remain locked even if the transfer lever is shifted from 4L or 4H into 2H as long as the vehicle runs in the same direction.

TO FREE

1. Stop the vehicle.
2. Shift transfer lever to 2H.
3. Move the vehicle in the opposite direction slowly for at least one metre.

When you move the vehicle in the opposite direction at 4L or 4H, the hubs are freed, and then locked.

SHIFTING PROCEDURE FOR CONVENTIONAL (PART-TIME) FOUR WHEEL DRIVE

NOTE: The transfer case shift lever is placed in 2H (2 wheel drive High Range) position for normal driving.

VEHICLE MOVING

NOTE: 1. When shifting into 2H from 4H, there may be a little time lag until the sliding sleeve moves for engagement.
2. Never shift from 4H to 4L or 4L to 4H while the vehicle is moving.

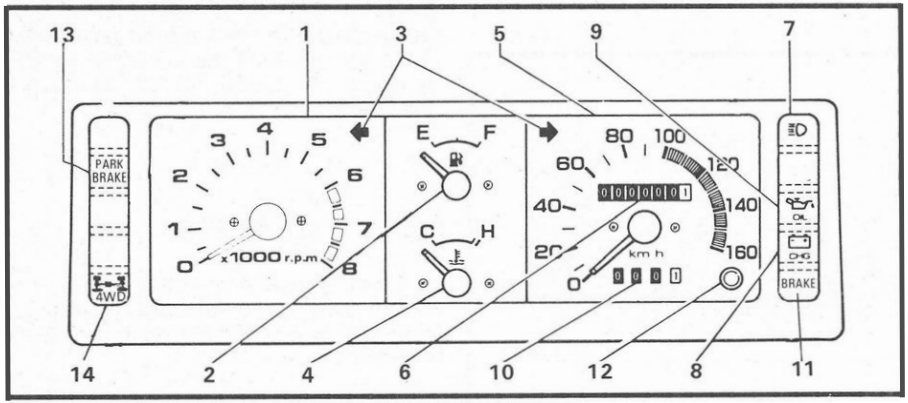
TO SHIFT TRANSFER CASE FROM	TO	PROCEDURE
4H (All Wheel Drive, High Range)	2H (Rear Wheel Drive)	1. May be made at any speed, forward or reverse. 2. Move lever fully into position. 3. Momentarily release or slightly depress accelerator pedal to relieve sliding sleeve movement.

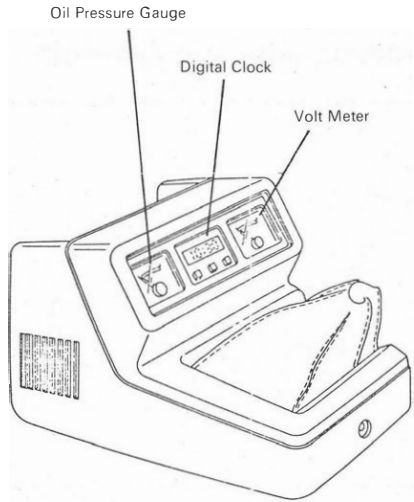
VEHICLE STATIONARY

NOTE: The transmission shift lever is placed in "Neutral" position if engine is running.

TO SHIFT TRANSFER CASE FROM	TO	PROCEDURE
Any Position	2H or 4H	1. Move lever fully into position.
Any Position	4L (All Wheel Drive, Low Range) (Used for low traction road surface only).	1. Move lever fully into position.

Instrument Panel—LS 2000. 5 Speed





1. Tachometer
2. Fuel Gauge
3. Turn Signal Indicators
4. Temperature Gauge
5. Speedometer
6. Odometer
7. High Beam Indicator
8. General Charge Indicator
9. Oil Pressure Indicator
10. Tripmeter
11. Brake Warning Light
12. Tripmeter reset knob
13. Park Brake Indicator
14. 4WD Indicator (4 x 4 model only)

Oil pressure gauge (where fitted)

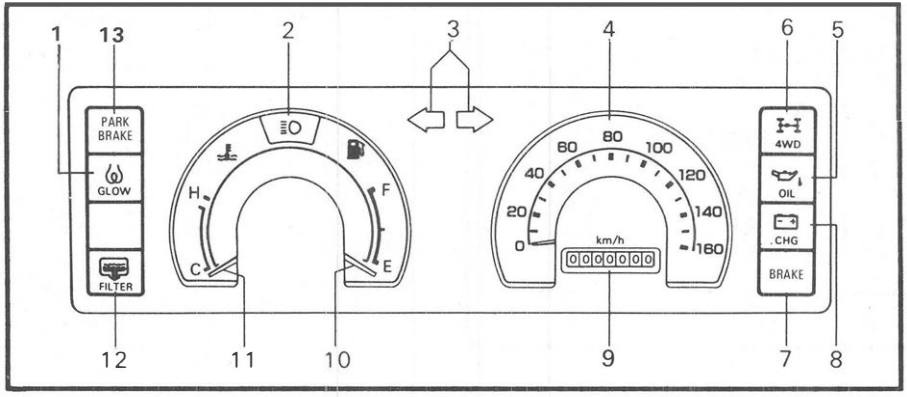
The gauge indicates the pressure of oil in the engine. If the needle does not deflect at all or if it gives an erratic indication, check the oil level. If the level is normal have the lubricating system checked immediately.

Voltmeter (where fitted)

The voltmeter indicates the condition of the electrical charging system. Normally the needle will remain in the white band operating area of the dial.
If the needle moves outside this area the electrical charging system will require checking; items such as the battery, voltage regulator, drive belt or wiring and connections could be affected.

Instrument Panel—

Instruments and Controls



1. Glow indicator (Diesel only)
2. High beam indicator
3. Turn signal indicators
4. Speedometer
5. Oil pressure indicator
6. 4WD indicator (4 x 4 models only)
7. Brake indicator
8. Generator charge indicator
9. Odometer
10. Fuel gauge
11. Temperature gauge
12. Fuel filter water indicator light (Diesel only)
13. Park Brake Indicator.

Speedometer

The speedometer hand indicates vehicle speed in kilometres per hour.

Odometer—The group of seven figures in the speedometer upper centre section indicates the accumulated kilometres travelled.

Fuel gauge

The fuel gauge is wired through the ignition switch and indicates the level of fuel in the tank when the ignition switch is turned on.

Oil pressure indicator light

This unit indicates oil pressure in the engine lubrication system. Proper indicator interpretation is given under "Starting the Engine".

Generator indicator light

The generator indicator light indicates generator operation. Normal operation is with the light off. Refer to "Starting the Engine" for complete indicator interpretation.

Brake indicator light

The brake indicator light indicates the level of brake fluid in the reservoirs. With the starter switch in "ON" position, the bulb lights up when the brake fluid in the reservoirs is lower than the specified level, cautioning the driver that brake fluid needs to be replenished.

NOTE: As a check on the condition of the Generator, Oil Pressure and Brake Indicator Lights, the bulbs will light up when the starter switch is in "ON" position but before the engine is started, and while the engine is being cranked, and then should go out as engine speed is increased.

Parking brake indicator light

With the starter switch in "ON" position the bulb lights up when the parking brake lever is pulled, cautioning the driver that the rear wheels will not rotate.

Temperature gauge

The centre area of the water temperature gauge is indicated by a shaded area. When the gauge needle is in the shaded area, normal operating temperature is indicated. However, if the needle moves beyond the centre area mark into the "H" side or hot area of the gauge, stop the engine until the cause of the overheating is determined.

4WD Indicator light (4 x 4 Model only)

This light will come on when the transfer shift lever is shifted into 4H or 4L position.

Glow indicator light (Diesel only)

Your diesel engine has a special starting system. Small heating elements, called "glow plugs", warm part of the engine for improved starting. The "GLOW" indicator light tells you when the engine is ready to be started.

Turning the ignition key to the "ON" position starts the system and turns on the "GLOW" indicator light.

The "GLOW" light may stay on a short time or may go out right away. The waiting time will vary with the engine and coolant temperatures.

When the glow plugs have heated the engine enough for it to start, the "GLOW" light will go out. This tells you the engine is ready to be started. If the light fails to come on, see your dealer.

Fuel filter water indicator light (Diesel only)

Under certain circumstances water may be taken into the fuel tank, and to prevent water from reaching the vital parts of the fuel system, a water separator is installed. When the level of water trapped within the water separator reaches the specified level, the light turns on.

If the light turns on and remains on with the engine running, it indicates the need for draining water separator. (Refer page 84.)

Light switch

To turn on the clearance lamps, tail lamps, licence plate lamps, and instrument panel lamps, pull the light control switch knob part way out. To turn on the headlamps in addition to the above mentioned lamps, pull the knob out to a definite stop.

NOTE: For operation of hazard flasher see Section "In Case of Emergency".

Windshield wipers and washers

The windshield wiping system operates at 2 speeds and is designed to wipe clear designated areas of the windshield under most inclement weather conditions. The windshield wipers work electrically and are not affected by engine operations.

- Check washer fluid level regularly—do it frequently when the weather is bad.

To start the wiper, turn the switch knob clockwise to LOW or HIGH speed. The two-speed wiper switch has three positions—OFF, LOW and HIGH.

To operate the windshield washers, depress the switch knob to send a jet of washer solvent or water onto the windshield. Turn the switch knob to operate the windshield wiper.

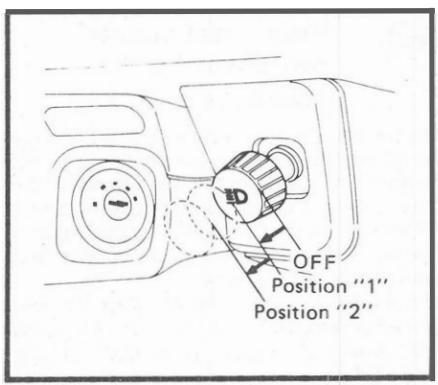
Electrical digital clock (where fitted)

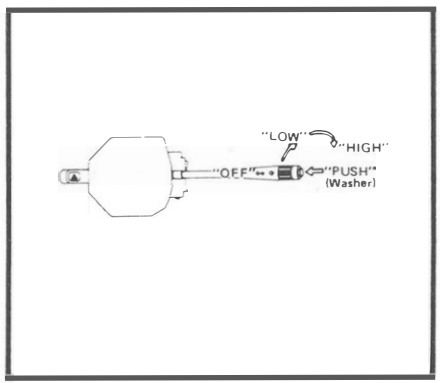
Time is displayed when the ignition switch is in the "ON" position. To reset the time, push the switches as necessary. The function of each switch is as follows:

"D" Display switch is pushed to display time with the ignition switched off. The display goes out when display switch is released.

"H" Hour indicator is advanced one hour each time this switch is pushed.

"M" Minute indication is advanced one minute each time this switch is pushed.
The clock can be accurately set since the next minute will not display until 60 seconds after releasing the "M" switch.





Floor controls

Service brakes

The service brake system is designed for braking performance under a wide range of driving conditions even when the vehicle is loaded to its full rated vehicle load.

CAUTION: Driving through deep water may wet the brakes and adversely affect brake performance so the vehicle will not slow down at the usual rate, and may pull to the right or left. Applying the brakes lightly will indicate whether they have been so affected. To dry them quickly, lightly apply the brakes while maintaining a safe forward speed with an assured clear distance ahead and to the sides until brake performance returns to normal.

Self–adjusting brakes

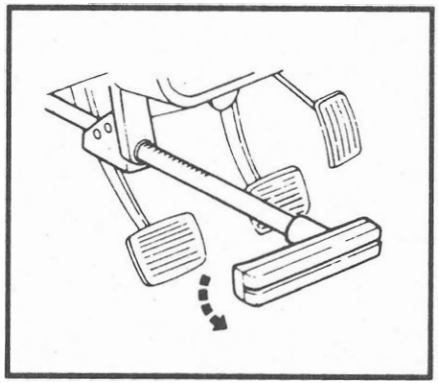
- The brakes on this vehicle are self-adjusting: discs on front and drums on rear. They have been designed so that periodic brake adjustment is not required.
- The front brakes adjust themselves each time the brakes are firmly applied.
- The rear brakes adjust themselves each time the parking brake is firmly applied.
- If the brake pedal goes down farther than normal, it may be due to a lack of adjustment. To find out if this is the case, apply the parking brake firmly several times with the vehicle stationary.
- See your dealer if pedal height does not return to normal, or if there is a rapid increase in pedal travel, which could be a sign of brake trouble.
- Also see your dealer if the parking brake needs adjustment.

NOTE: ''Riding the brake'' by resting your foot on the brake pedal when not intending to brake can cause abnormally high brake temperatures, excessive lining wear and possible damage to the brakes.

Parking brake

A ratchet type hand lever parking brake control is mounted to the left of the steering column under the instrument panel.

- To set parking brake, pull lever. (The parking brake lever travel is normal if it is within 13-14 notches.)
- For maximum holding power, depress regular brake pedal at the same time.
- To release the brake, turn the lever counterclockwise slightly with the catch pulled and then push the lever forward securely.
- Never drive vehicle with parking brake set as this may overheat or otherwise damage rear brakes.



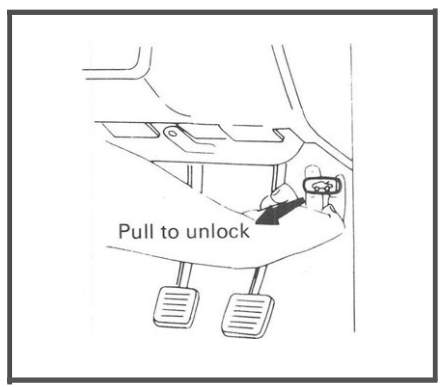
Clutch pedal

A clutch pedal is used to engage or disengage the clutch, thereby connecting or disconnecting the engine from the transmission and driveline to rear wheels. When the pedal is fully extended the clutch is engaged, driving the transmission and the rear wheels.

CAUTION: Do not drive with your left foot resting on the clutch pedal, or premature wear of clutch facing will result, causing clutch slippage or juddering.

Engine hood release

To raise the engine hood, unlock the safety catch by pulling the release lever under the instrument panel (drive side) and raise the hood all the way up so that it stays in position. Be sure support rod end engages hole on head reinforcement. To close, remove the support rod end from the hole on the hood reinforcement, put the support rod back into the clip on the deflector panel. Then, lower the engine hood to a horizontal level and push down on the front until it is locked in position.



Radio (where fitted)

(1) OFF - and - ON switch and volume control knob:

The power switch is of the push button type. Turn the knob to control volume.

(2) Tone control:

Turn the rear ring of the volume control knob to control tone.

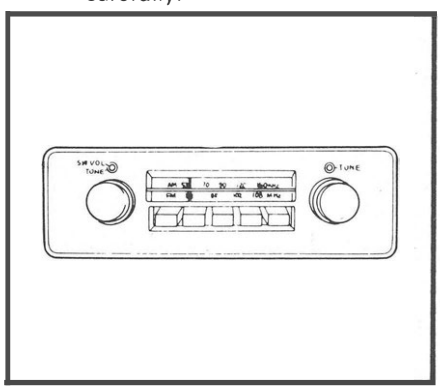
(3) Tuning knob:

Turn the knob to tune to the desired station.

(4) Tuning buttons:

Push the button to tune in to the preset station. Tuning buttons can be set in the following manner:

1. Pull out the button.
2. Tune in to the station desired by turning the manual tuning knob.
3. Push in the tuning button carefully.



Antenna:

Pull out the antenna to gain sensitivity.

Ventilation

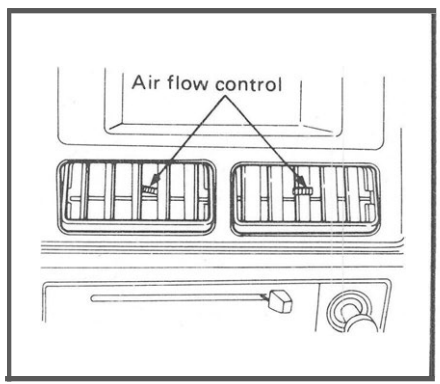
Intake of outside air

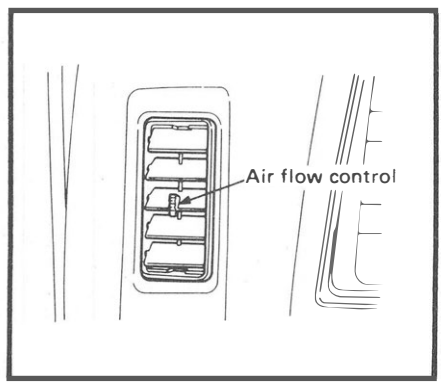
Air is delivered through the centre vent and side vent on each side when the air source lever is placed in "FRESH" position with the select lever in "VENT" position.

Controlling direction of air flow

- **Centre vent**
  The centre vent is provided on the instrument panel. Vertical direction of air flow is controlled by pivoting the entire grille up or down. The knobs at the grille control the direction of air flow horizontally.

- **Side vent**
  The side vent is provided on each end of the instrumental panel. Horizontal direction of air flow is controlled by pivoting the entire grille sideways. The knob at the centre part of the grille controls direction of air flow vertically.





Heater–defroster

Fan lever

The fan lever (OFF-HI) provides speed control of the blower fan in all selector lever positions except OFF.

Temperature lever

The temperature lever regulates the temperature of the air entering the passenger compartment in all selected lever positions.

Select lever

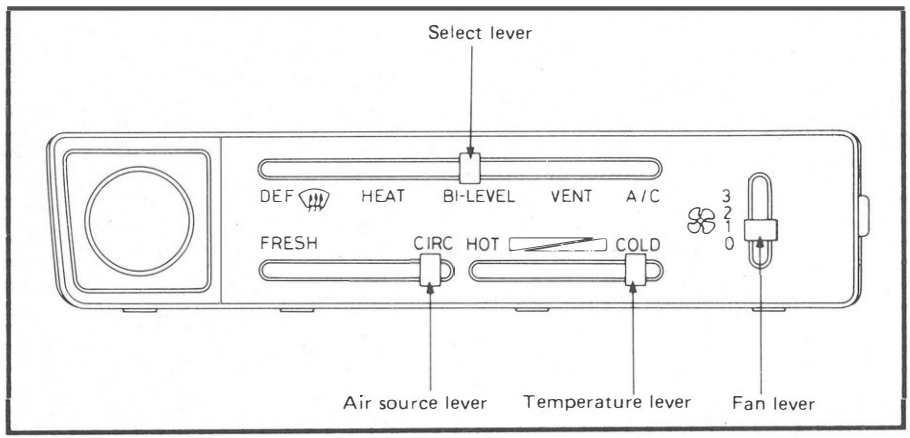
The air select lever regulates the air flow to the heater and defroster outlets.

OFF—In this position the blower does not operate. However, when the vehicle is moving, air will enter the passenger compartment through the heater outlet.

BI-LEVEL—Outside air is directed out of the upper outlets and the heater outlets. This position provides comfort and keeps the windshield clear under low fogging conditions.

HEAT—Outside air is delivered from the heater outlets with a small amount from the defroster outlets. This position is used for most winter driving.

DEF—Outside air is delivered from the defroster outlets with a small amount from the heater outlets. To defog the windshield in summer set the temperature lever at "COLD" and the selector lever at "DEF". Set the fan lever at "HI". To defrost or defog the windshield in winter set the temperature lever at "HOT" and the selector lever at "HEAT". Operate system for 30 seconds to remove humid air from the system, then set the selector lever at "DEF" and the fan lever at "HI".



Ventilating

To draw outside air directly into the vehicle, set the Temperature lever at "COLD" and the Select lever at "VENT". Set the fan lever for desired air flow. With the air source lever in position of "FRESH" the outlet grille is adjustable.

Heating

Set the Temperature lever at "HOT" and the Select lever at "HEAT". Inlet air flow temperature may be varied by moving the Temperature lever between "COLD" and "HOT". Set the fan lever for desired air flow. Set the air source lever in position "FRESH".

Windshield defrosting and defogging

To defog the windshield in summer set the Temperature lever at "COLD" and the Select lever at "DEF".

Set the Fan lever at "HI". To defrost or defog the windshield in winter set the Temperature lever at "HOT" and the Select lever at "HEAT". Operate system for 30 seconds to remove humid air from the system, then set the Select lever at "DEF" and the Fan lever at "HI". Both in summer and winter operate the system with the air Source lever set in position of "FRESH".

Bi-level

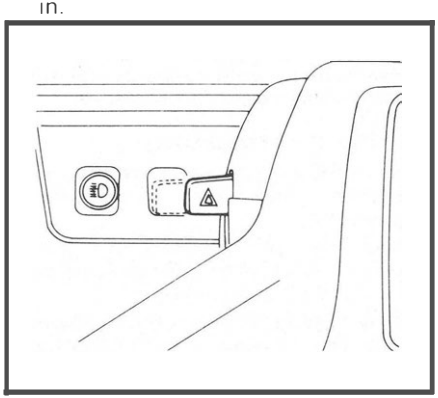
This position is used to divert heated air to the floor area. Even though the temperature lever can be set in any position between COLD and HOT, it is best to set the lever in the intermediate position when the Select lever is set for Bi-Level so that optimum temperature control can be achieved even in winter, provided the sun is shining.

The fan lever can be set in any position. Operate the system with the air source lever set in position of "FRESH".

Section 3
In case of emergency

Four-way hazard warning flasher

- Use the warning flasher to warn other drivers any time your vehicle becomes a traffic hazard, day or night.
- Turn on the hazard warning flasher, with engine ignition off or on, by pulling out the button located on the left side of the steering column behind the steering wheel.
- To cancel the flasher, push the button in.



Emergency starting

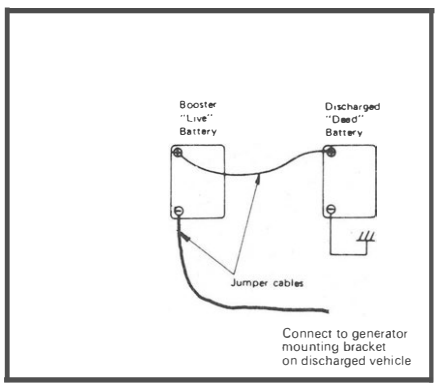
Jump Starting With Auxiliary (Booster) Battery

- To start the vehicle when the battery is discharged, use a single auxiliary battery of the same nominal voltage, i.e. 12 volts, as the discharged battery, with suitable jumper cables.
- Make connections as set out below under "Jump Starting With Auxiliary (Booster) Battery" to lessen the chance of personal injury or property damage.

CAUTION: Never expose battery to open flame or electric spark—battery action generates hydrogen gas which is flammable and explosive. Don't allow battery fluid to contact skin, eyes, fabrics, or painted surfaces—fluid is a sulphuric acid solution which could cause serious personal injury or property damage. Wear eye protection when working with battery.

Both booster and discharged battery should be treated carefully when using jumper cables. Follow exactly the procedure outlined below, being careful not to cause sparks.

1. Set parking brake and place transmission in neutral. Turn off lights and other electrical loads.
2. Remove vent caps from both the booster and the discharged batteries. Lay a cloth over the open vent wells of each battery. These two actions help reduce the explosion hazard always present in either battery when connecting "live" booster batteries to "dead" batteries.
3. Attach one end of one jumper cable to the positive terminal of the booster battery (identified by a red colour, "+" or "P" on the battery case, post or clamp) and the other end of same cable to positive terminal or discharged battery. Do NOT permit vehicles to touch each other, as this could establish a ground connection and counteract the benefits of this procedure.
4. Attach one end of the remaining negative (−) cable to the negative terminal (black colour, "−" or "N") of the booster battery, and the other end to the generator mounting bracket (do not connect directly to negative post of dead battery)—taking care that clamps from one cable do not touch the clamps on the other cable. Do not lean over the battery when making this connection. Reverse this sequence exactly when removing the


Booster "Live" Battery
Discharged "Dead" Battery
Jumper cables
Connect to generator mounting bracket on discharged vehicle

jumper cables. Reinstall vent caps and discard cloths as these may have corrosive acid on them.

CAUTION: Any procedure other than the above could result in: (1) personal injury caused by electrolyte squirting out of the battery vents, (2) personal injury or property damage due to battery explosion, (3) damage to the charging system of the booster vehicle or of the immobilised vehicle.
Do not attempt to jump start a vehicle having a frozen battery because the battery may rupture or explode. If a frozen battery is suspected, examine all fill vents on the battery. If ice can be seen, or if the electrolyte fluid cannot be seen, do not attempt to start with jumper cables as long as the battery remains frozen.

Push starting

- NEVER TOW the vehicle to start because the surge forward when the engine starts could cause a collision with the tow vehicle.
- When being pushed to start the engine, turn off all unnecessary electrical loads, turn starter switch to "ON", depress the clutch pedal and place the shift lever in high gear. Release the clutch pedal when speed reaches 15-25 km/h. Bumpers and other parts contacted by the pushing vehicle should be protected from damage during pushing.

Towing

Proper lifting or towing equipment is necessary, when lifting or towing the vehicle to prevent damage to it during any towing operation. Detailed towing information is available at your dealer and has been provided to tow truck operators responsible for movement of disabled or locked vehicles. However, in an emergency, a disabled or locked vehicle may be towed in the following manner:

- Fit the towing rope (safety chains or cables) in the locations as follows;

Front
Strut bar bracket
Rear
Shackle

CAUTION: Exercise extreme care, particularly when towing a vehicle with a rope hooked to the axle tube, to guard rear suspension and relative parts against shock load. In any case towing should be for a short distance only.

- When a need has arisen for towing your vehicle, release the parking brake and hold the transmission in neutral. It is important that the transmission and rear axle are in good operating condition to enable the vehicle to be towed.
- When towing a vehicle with trouble in the rear axle;
  It is necessary to tow the vehicle with the rear wheels lifted and to disconnect the propeller shaft, or to lift the rear wheels when towing a vehicle with transmission trouble.

In Case of Towing Four Wheel Drive Vehicles:
1. Shift the transfer case into "2H" position.
2. Hold the transmission in "Neutral" position.

Freeing vehicle from sand, etc.

If it becomes necessary to rock the vehicle to free it from sand, mud or snow, move the gear shift lever from second to reverse gear. Do not race engine. For best possible traction, avoid spinning wheels when trying to free the vehicle. Use of tyre chains is recommended for temporary assistance when traction is lost on ice or snow.

CAUTION: Wheel spin should not exceed 55 km/h as indicated on the speedometer. Unless care is taken in limiting rear wheel spin, one spinning wheel can reach excessive speeds, resulting in possible tyre disintegration or differential failure, which could cause personal injury or extensive vehicle damage.

Engine overheating

The following symptoms will become apparent if engine overheats.

- The coolant temperature gauge pointer will move up to the uppermost line of 120°C or higher.
- Engine ping will become excessive.
- Loss of engine power will be noticed.
- Either steam or boiling water may squirt out of the radiator.

If overheating is detected, take the following steps.

- Stop the vehicle and open the engine hood to provide good ventilation.
- Run the engine at a speed (around 1,500 rpm) slightly higher than idle speed for about 5 to 10 minutes. However, if the fan drive belt is broken or if engine coolant is leaking, stop the engine immediately.
- Stop the engine and carefully remove the radiator cap.

CAUTION: To Remove the Radiator Cap When Engine is Hot;
Do not remove radiator cap while engine and radiator are still hot, because the cooling system will blow out scalding fluid and steam under pressure.
To prevent loss of coolant and avoid the danger of being burned, coolant level should be checked, and coolant added only when engine is cool.

To remove the radiator cap when engine is cool;

Slowly rotate cap counterclockwise to detent (DO NOT PRESS DOWN WHILE ROTATING). Wait until any residual pressure is relieved—as indicated by a hissing sound. After any hissing ceases, press down on cap while continuing to rotate counterclockwise.

Radiator pressure caps should be checked annually by a qualified mechanic for proper operation and replaced as required with the applicable type.

- Check coolant level and replenish with fresh water up to the level of the filler neck when the engine is cold.

Incorrect ignition timing, a loose fan drive belt, insufficient level of engine lubrication oil and/or engine coolant, radiator fins clogged up with foreign matter and radiator tubes blocked are possible causes of engine overheating. Determine the cause of trouble and correct as soon as possible.

When oil pressure indicator light comes on

- If the oil pressure indicator light comes on while engine is running, immediately stop engine.

CAUTION: Do not run the engine at high speed when the oil pressure indicator light is on, otherwise the engine may be damaged.

- Check the level of the engine oil and check for leakage of lubricating oil at the same time. Replenish with proper engine oil up to the specified level, if necessary, and restart the engine to see that oil pressure indicator light goes out.

  If the oil pressure indicator light does not go out even with sufficient level of lubricant in the crankcase, or lubricant is leaking, obtain assistance from your GMH dealer.

When charge indicator light comes on

- This indicates that the alternator is not generating. Immediately stop your vehicle and check for loose or broken fan drive belt. If loose, adjust belt tension. If the belt is found broken, or if the fan belt is not responsible for the trouble, have your GMH dealer inspect and correct the fault.

CAUTION: Driving under this condition will eventually discharge the battery. If fan belt is loose or broken, overheating of engine will result. DO NOT drive for an extended period of time if the charge warning light is on.

When an electrical device is inoperative

- If chassis electrical trouble is encountered without extreme damage to any electrical parts, check for burned out fuse, broken wire, poor connections or poor grounding and correct as necessary.

NOTE: The fuse box is located on the left side valance panel within the engine compartment. It includes 6 fuse cartridges plus 4 spare fuse cartridges. (For amperage of fuses, refer to "Specifications" in the later section.)

CAUTION: When replacing a fuse be sure to use a fuse of the specified amperage. Never install a wire or similar for replacement as it may cause a fire hazard to the vehicle.

- If the cause of trouble cannot be located through the above checks and trouble persists, contact your nearest GMH dealer.

Trailer towing

G.C.M.—

The maximum gross combined mass is 2750 kg if trailer is equipped with braking which is initiated by driver (over-run operated trailer brakes do not come into this category).
Maximum gross combined mass is 2400 kg if the trailer is not equipped with driver initiated braking. The trailer should not exceed 450 kg in weight.

Towbar loads

The load imposed on the towbar ball must be included in the maximum rear axle loading and the maximum loaded vehicle mass. (Refer chart) unless a load equalising hitch is used which fully compensates for towbar ball load by restoring the towbar ball height to the unhitched position.

Safe trailer towing

- Your vehicle will handle differently with a towed load. It's a good idea to make a proper familiarization run.
- Have your vehicle correctly maintained.
- You should have an extended-arm mirror on both sides of the vehicle if vision is obscured.
- Headlights should be re-aimed if necessary with trailer attached.
- Select a suitable low gear to assist your braking when descending steep grades.
- Avoid sudden steering manoeuvres at speed to minimize trailer mass affecting vehicle and trailer control.

CAUTIONS:

1. Do not use axle-mounted hitches.
2. Trailer brakes must meet State law requirements where vehicle will be operating. Some States specify that the maximum load to be towed must not exceed the vehicle weight.
3. It is permissible to tap into the brake system with a unit not more than 0.21 cc of fluid displacement during the operation of the brakes.
4. When the tow bar is not in use, the tongue should be removed in order to prevent injury and damage.
5. Correctly rated tow bar and tongue package must be used.

Vehicle mass—see front of book

At all times the total of the front axle load and the rear axle load should not exceed the maximum loaded vehicle mass specified.

Ball load

The ball load should be in the range of 7% to 12% of the loaded trailer measured at towing ball operating height condition, (vehicle also laden) when towing tyre pressure should be adjusted to include tow ball load.

Running-in period

It is best to drive your new Rodeo for 1500 kilometres before towing a load. If you must tow before this do not exceed 80 km/h on good roads. No heavy off road towing should be attempted before 1500 km.

Loading

Overloading is a safety hazard and could also shorten the life of your vehicle or its parts.

Maximum loading limits for your particular vehicle are G.V.M. 2350 kg and G.C.M. refer Trailer towing.

Tyre maximum load rating and maximum vehicle loading

Kerb weight is the weight of an unloaded vehicle which includes the weight of all coolants and lubricants together with a full tank of fuel. It must be understood that the maximum load rating shown on Tyre Rating Charts are not an actual load capacity that can be used for each wheel. While the tyre manufacturers rate the tyre for this load application at the maximum pressure shown in their literature, the vehicle manufacturer's suspension, ride and handling characteristics must be taken into account. Therefore, the maximum loaded vehicle weight should not be exceeded.

Air bleeding of fuel system (Diesel engine)

If the fuel tank has been emptied, the chance is that air might have entered the fuel system. With air in the fuel system, smooth flow of fuel into the engine is interrupted and to prevent this, bleeding of the fuel system should be performed.

1. With a spanner or screwdriver, loosen the bleeder screw on the overflow valve of the injection pump.
2. Operate the priming pump (as shown) up and down until fuel comes out the bleeder screw. Continue pumping until no more air bubbles appear in the fuel being pumped out.
3. After bleeding, securely tighten the bleeder screw and then operate the priming pump up and down several times.

Jacking instructions and changing a flat tyre

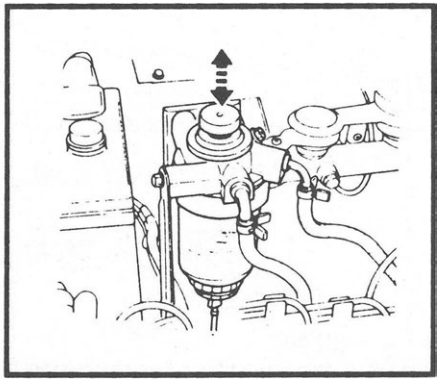
Jack, tools and spare wheel wrench are stored behind seat.

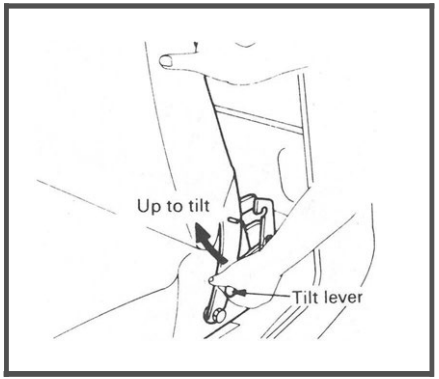
NOTE: The spare wheel can be removed or stowed in position by using the spare wheel wrench. Fit the hooked end of the wrench into a slot in the spare wheel winch. Turn the handle counterclockwise to lower the spare wheel to the ground. When storing the wheel, turn the handle clockwise to raise the wheel.

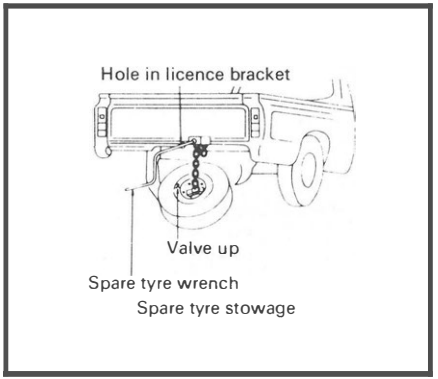
CAUTION: When the wheel is raised all the way into stowage position, turn the crank further to ensure wheel being held securely in position. Remove and stow wrench.

Preparations:

- Park on a level surface and set parking brake firmly.
- Set transmission in "reverse".
- Activate hazard warning flasher.
- Block the wheel diagonally opposite the jack position.
- Remove hub cap with tool provided.
- Loosen but do not remove wheel nuts.
- Place jack at recommended jacking point.



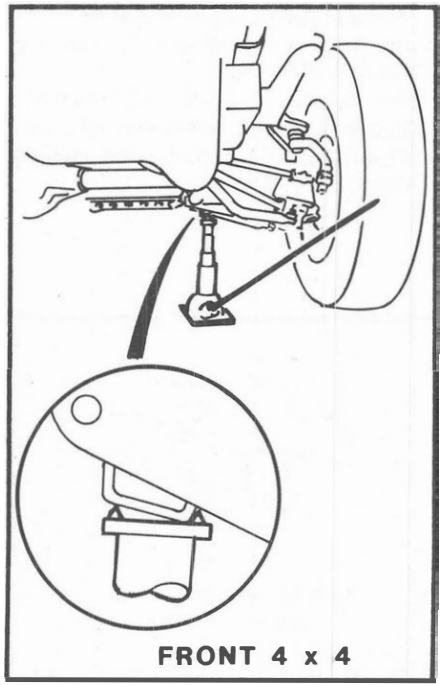




When jacking the front wheels of the 4 x 4 model using the bottle jack provided with the vehicle; care must be taken to ensure jack is located positively on lower control arm as shown in the sketch below.

Jacking Points of Vehicle

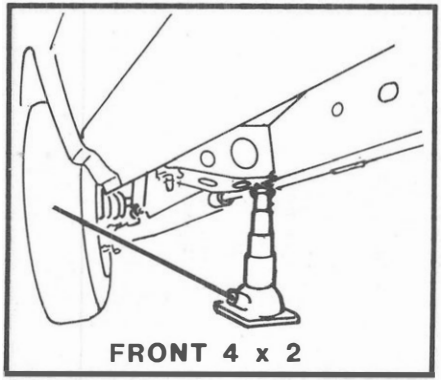
Front	Under the sidemember	(4 x 2 Model)
	Under the lower control arm	(4 x 4 Model)
Rear	Under the rear axle case	



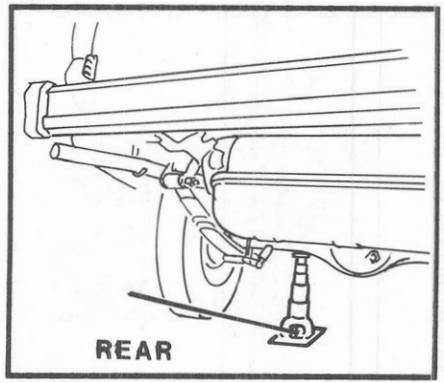
FRONT 4 x 4

Wheel Nut-Torques:
88 Newton metres (65 ft. lbs.).

CAUTION: Follow jacking preparations and instructions in order to reduce the possibility of serious personal injury. Stand clear of and never get beneath the vehicle when it is supported only by a jack. Do not start or run engine while vehicle is on jack.



FRONT 4 x 2



REAR

Emission control systems

Petrol engines only

IMPORTANT: This is an explanation of the operation of the emission control systems fitted to your new vehicle and should remain with the vehicle at the time of resale.

Introduction

There are three areas from which pollutants are emitted:

(a) Exhaust System
(b) Crankcase
(c) Fuel System.

A number of controls have been installed to control the amount of pollutants emitted from your new vehicle.
The following has been produced to assist you in understanding their function by briefly explaining the operation of the various components involved.

Sources of emissions

During the combustion process in an automotive engine, some of the fuel (hydrocarbons) fails to burn and is discharged into the engine crankcase or exhaust system. Additionally hydrocarbons are emitted into the atmosphere through evaporation of petrol vapours from the fuel tank and carburettor. Of the total hydrocarbons coming from uncontrolled automobiles, about 25% are emitted from the crankcase, 20% from the fuel system and 55% from the engine exhaust.
In addition to hydrocarbons, carbon monoxide and oxides of nitrogen are also formed during the combustion process. These are also discharged into the exhaust system.

Exhaust emissions

The exhaust of a petrol automobile engine contains three significant air pollutants; carbon monoxide, unburned hydrocarbons, and oxides of nitrogen. It also contains small amounts of solid matter—called particulates—made up largely of lead compounds from the tetraethyl lead used to increase the octane rating of petrol.
Control of hydrocarbon emissions is important since, when subjected to sunlight under certain conditions, they may react with other gases to form photochemical smog. Carbon monoxide does not enter into the complex of photochemical smog reaction, but it is itself a pollutant and, thus, has been controlled to prevent high atmospheric concentrations.

Exhaust emission control systems

Controlled combustion system (CCS) components

Carburettor

The carburettor has been calibrated to give a lean mixture of a good quality, particularly at idle or during slow speed operation.

Automatic choke

An electrically heated metal strip coil is used to open the choke. As the metal strip heats up the choke progressively comes out of operation.

Distributor

The advance curve of the ignition distributor contributes to meeting the emission limits.

Idle stop solenoid

An idle stop solenoid, which shuts off the idle fuel mixture when the ignition switch is turned off, has been introduced to reduce the possibility of engine run-on.

Cooling system thermostat

The thermostat opening temperature has been revised to meet the requirements of the system during engine warm-up.

Coasting richer system (CR)

The coasting richer system fitted to Holden Rodeo, is an independently operated auxiliary fuel system actuated by a solenoid on the carburettor. When energised, the solenoid retracts a plunger that allows an air/fuel mixture to enter under the secondary throttle valve. This mixture brings the air/fuel ratio back into balance for efficient combustion while the vehicle is operating under closed throttle conditions in third or fourth gear.

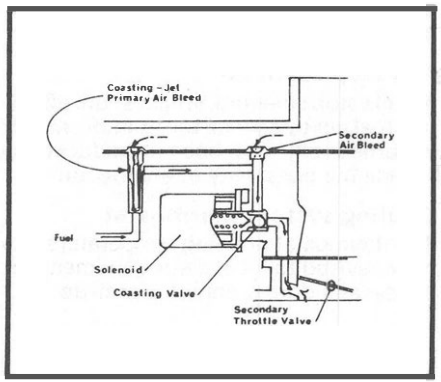
Hot idle compensator system (HIC)

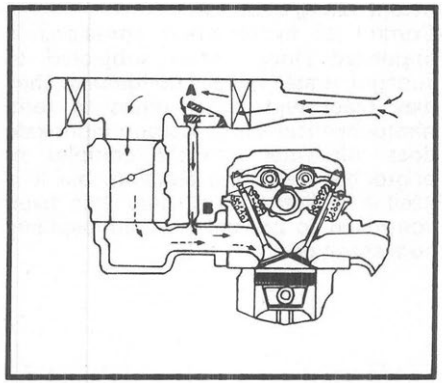
Located in the air cleaner the hot idle compensator valve is operated by a bi-metallic arm. (A) As the temperature in the air cleaner reaches approximately 47°C the valve opens and allows filtered air to enter through a restricted orifice into the intake manifold (B) via a connecting hose. This increases idle speed and air flow, leaning off the air fuel mixture and thus reducing HC and CO content. It also gives a smoother idle as intake air temperature increases.

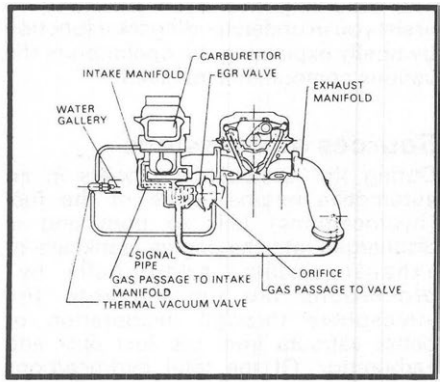
Exhaust gas recirculation (EGR) system

This system introduces controlled quantities of exhaust gas into the inlet manifold resulting in lower peak combustion temperatures in the combustion process which, in turn, reduces the formation of nitrogen oxides.

A thermal vacuum valve opens the vacuum line to the exhaust gas recirculation valve only after the engine coolant has reached a predetermined temperature. At this stage the valve is subjected to a ported vacuum signal from the carburettor.







Vacuum advance control (VAC) system

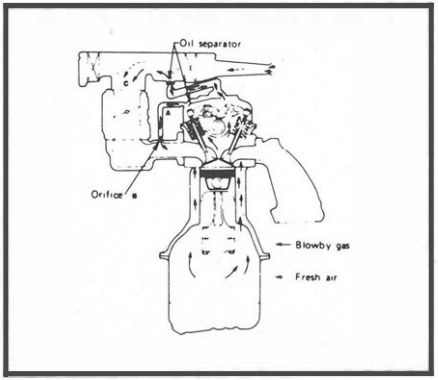
This system is designed to control the vacuum signal available to the vacuum advance mechanism of the distributor. A "ported" vacuum spark advance system is used to optimise emission control as well as vehicle performance. When the throttle is in the idle position, the "port" which is above the throttle valve, has no vacuum present. As the throttle opens the port is uncovered providing vacuum advance for normal economy operation.

Crankcase emission control system

Positive Crankcase Ventilation (PCV) System

The purpose of the system is to draw the blow-by gases out of the crankcase, into the intake manifold system and thus recycle these gases through the combustion process in the cylinders.

At idle and during normal driving conditions gases are drawn out of the crankcase via a hose (A) through the restricted orifice (B) into the intake manifold. During acceleration or constant high speed operation some of the blow-by gas is drawn into the carburettor via the air cleaner (C).



Crankcase emissions

Emission of hydrocarbons from the engine crankcase is another source of automotive air pollution. This emission occurs in the following manner.

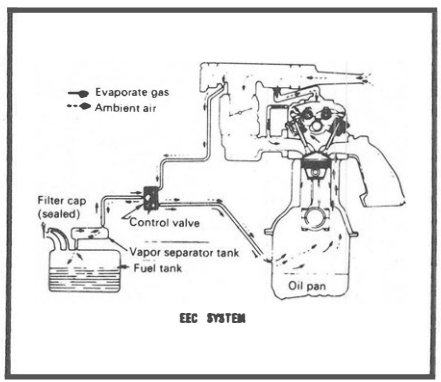
During the combustion process in all petrol engines, some gases escape past the piston rings and into the crankcase. These gases contain unburned fuel. This "blow-by" occurs because of the very high pressures in the combustion chambers.

Evaporative emissions

Another source of emissions from automobiles is evaporation of petrol. This occurs, not only when the fuel tank is being filled, but at other times, even when the vehicle is not in operation. Special systems to control evaporation have recently been developed, and are now installed on Holden Rodeo KB.

Evaporative emission control (EEC) system

The fuel vapours are directed from the liquid/vapour separator tank to the engine oil pan and purged via the PCV system. In order to prevent vapours flowing to the air cleaner, the relief valve on the air cleaner side of the Control Valve remains closed while the check valve to the crankcase is open. The relief valve also compensates pressure/vacuum in the fuel tank.



EEC SYSTEM

Maintenance

The required owner emission control systems maintenance operations presented in this Owners Handbook should be performed by an authorised GMH dealer or any other qualified service outlet which regularly performs such services.

Vehicle operations

The maintenance instructions contained in the Owner Handbook, are based on the assumption that your vehicle will be used as designed and is operated in accordance with the instruction provided in the handbook.

Service manuals

Service manuals, providing greater detail on emission systems, are available for purchase by owners who desire to perform their own vehicle maintenance.

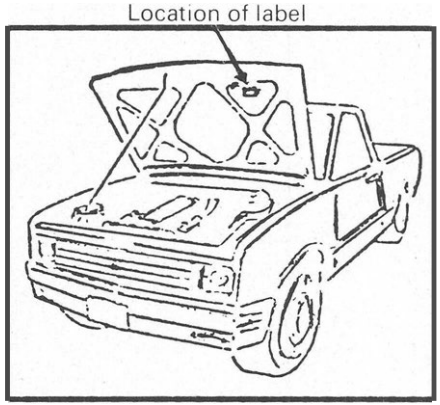
These are available from a GMH dealer.

Service replacement parts

The emission control systems of your new vehicle were designed, built and tested using GMH parts and the vehicle is certified as being in conformity with Australian Design Rules covering emissions.

Accordingly, it is recommended that any replacement parts used for required maintenance services or for the repair of emission control systems be new GMH parts. Use of replacement parts which are not of equivalent quality may impair the effectiveness of such systems, and may adversely affect your vehicle Warranty.

Vehicle emission control information label
—Petrol engined vehicles only.



VEHICLE EMISSION CONTROL INFORMATION

ENGINE TUNE-UP CONDITIONS

MAKE IDLE SPEED AND TIMING ADJUSTMENTS WITH ENGINE AT NORMAL OPERATING TEMPERATURE CHOKE OPEN AIR CLEANER INSTALLED AND DISTRIBUTOR IDLE COMPENSATOR AND EGR VACUUM LINES DISCONNECTED AND PLUGGED DASHPOT FULLY SHIFTED ALL ACCESSORIES OFF AND TRANSMISSION IN NEUTRAL RECONNECT THE VACUUM LINES WHEN ADJUSTMENTS ARE COMPLETED

SET PARKING BRAKE AND BLOCK DRIVE WHEELS.

IDLE SPEED AND IDLE MIXTURE SETTING PROCEDURE

1 TURN THE IDLE MIXTURE ADJUST SCREW ALL THE WAY IN AND BACK OUT 3 TURNS
2 ADJUST THROTTLE ADJUST SCREW TO 800 RPM
3 ADJUST SETTING OF IDLE MIXTURE ADJUST SCREW TO ACHIEVE THE MAXIMUM ENGINE SPEED
4 RESET THROTTLE ADJUST SCREW TO 900 RPM
5 TURN IDLE MIXTURE ADJUST SCREW 3/4 TURN CLOCKWISE (LEAN) FROM ITEM 4 POSITION
6 RESET THROTTLE ADJUST SCREW TO 800 RPM
7 ADDITIONAL PROCEDURE (DASHPOT SETTING) MAINTAIN THE ENGINE SPEED BETWEEN 2,200 RPM AND 2,600 RPM SET THE DASHPOT TO CONTACT THE DASHPOT SHAFT END WITH THE DASHPOT LEVER AND THEN FULLY TIGHTEN THE LOCK NUT

IGNITION TIMING SETTING PROCEDURE

1 SET SPECIFIED IDLE SPEED
2 CONNECT TIMING LIGHT LEAD TO NUMBER 1 CYLINDER
3 ALIGN MARK ON CRANKSHAFT PULLEY TO TIMING MARK WITH TIMING LIGHT AIMED TOWARD TIMING MARK

CAUTION REMOVAL OF ADJUSTMENT CAP AND ALTERATION TO OTHER THAN SPECIFIED IDLE MIXTURE SETTING MAY VIOLATE STATE LAWS SEE SERVICE MANUAL FOR FURTHER INFORMATION

ENGINE	IGNITION		PLUG GAP	IDLE SPEED	
	DWELL	TIMING			
L4 1949	52	6 BTDC	0.75 mm	800 RPM	P No. 8941046800

Section 4

Owner relations and GMH Dealers

We want you to be happy with your new Rodeo and with the people you deal with while you have the vehicle.

Normally, any problems which may arise with the sales transaction, operation or servicing of your vehicle will be handled by your Dealer's Sales and Service department.

We realise however that, with the best intentions, misunderstandings do occur sometimes.

If you have a problem that has not been settled to your satisfaction here's what to do:

Step 1:

Discuss the problem with one of the Dealer's management people. If you feel you haven't got satisfaction from the Sales Manager or Service Manager—go to the General Manager or the Dealer himself.

Step 2:

If it seems that no-one at the dealership can help fully, write to the GMH Owner Relations Manager in your State outlining your problem and including your name, address and telephone number; the vehicle model number and vehicle identification number; the vehicle delivery date and odometer reading and the Dealer's name and address. This information will be on your Warranty Certificate.

Step 3:

By now you should have satisfaction. If not, you can write to the National Owner Relations Manager, GMH Sales Pty Ltd, P.O. Box 548D, Melbourne 3001.

GMH
Owner Relations Managers

QUEENSLAND
General Motors-Holden's Sales Pty. Ltd.,
Box 728, G.P.O.,
BRISBANE, QLD. 4001.

NEW SOUTH WALES AND AUSTRALIAN CAPITAL TERRITORY
General Motors-Holden's Sales Pty. Ltd.,
Box 481, P.O.,
EDGECLIFF, N.S.W. 2027.

VICTORIA AND TASMANIA
General Motors-Holden's Sales Pty. Ltd.,
Victorian Zone Service Division,
Box 548D, G.P.O.,
MELBOURNE 3001.

SOUTH AUSTRALIA AND NORTHERN TERRITORY
General Motors-Holden's Sales Pty. Ltd.,
Box 221, P.O.,
ELIZABETH, S.A. 5112.

WESTERN AUSTRALIA
General Motors—Holden's Sales Pty. Ltd.,
P.O. Box 426,
WEST PERTH, W.A. 6005.

Authorised GMH Dealers

(Note: Dealership names and locations listed are effective as at 1/5/83. These may change from time to time without notice)

NEW SOUTH WALES — Metropolitan Dealers

ARNCLIFFE
Suttons Motors (Arncliffe) Pty. Ltd.,
93 Princes Highway

ASHFIELD
Muirs Motors (Ashfield) Pty. Ltd.,
252 Parramatta Road

BALGOWLAH
Ross Hannon Holden
164 Condamine Street

BAULKHAM HILLS
Tony Packard Holden
Cnr. Victoria Avenue & Windsor Road

BELMONT
Young & Green (Belmont) Pty. Ltd.,
444 Pacific Highway

BLACKTOWN
Townsend Motors
125 Main Street

CABRAMATTA
Ron Hodgson Holden
266 Hume Highway

CAMPBELLTOWN
Clintons Motors Pty. Ltd.,
3-17 Queen Street

CARDIFF
Brian Kelly Holden
35-39 Macquarie Road

CHATSWOOD
Sundell Holden
815-843 Pacific Highway

CHULLORA
Suttons Motors (Chullora) Pty. Ltd.,
Cnr. Hume Highway & Waterloo Road

CROW'S NEST
J. N. Caldwell (Holdings) Pty. Ltd.,
1 Alexander Street

DEE WHY
Graham Patching Holden
Cnr. May and Mooramba Roads

GOSFORD
MKL Gosford Motors Pty. Ltd.,
131 Henry Parry Drive

GOSFORD
Noble Motors
Pacific Highway

HOMEBUSH
Suttons Motors (Homebush)
112 Parramatta Road

HORNSBY
John A. Gilbert Pty. Ltd.,
90 Pacific Highway

KINGSFORD
John Pelligrini Holden
263-271 Anzac Parade

KINGSWOOD
W. L. Chapman Pty. Ltd.,
107-119 Gt. Western Highway

LAKEMBA
Nash Holden
1018 Canterbury Road

LIVERPOOL
A. C. McGrath & Company,
Cnr. Castlereagh St. & Hume Highway

LIVERPOOL
Pat Cullen's Garage,
324-360 Hume Highway

MIRANDA
Greg Ball Holden
1-3 Kiora Road

MOSMAN
Norman G. Booth Properties Ltd.,
501 Military Road

NEWCASTLE
Young & Green Pty. Ltd.,
745 Hunter Street

NEWPORT BEACH
Sundell Holden
Barrenjoey Road

PADSTOW
Purnell Bros. Holden
19 Davies Road

PARRAMATTA
Fair Deal Car Sales Parramatta
65 Church Street

PARRAMATTA
Hillsdon's Pty. Ltd.,
87 Church Street

PENNANT HILLS
Les Vagg Holden
351-355 Pennant Hills Road

RANDWICK
Boyded Randwick,
265 Avoca Street

ROCKDALE
C. V. Holland
571 Princes Highway

RYDE
Muirs Motors (Ryde) Pty. Ltd.,
603-605 Victoria Road

ST. MARY'S
Lance Motors Pty. Ltd.,
Corner Glossop & Harris Streets

SPRINGWOOD
Kerry's Motors Pty. Ltd.,
28 Great Western Highway

TORONTO
Young & Green (Toronto) Pty. Ltd.,
Carey Street

WINDSOR
Hawkesbury Valley Motors,
122 George Street.

WARILLA
Wilson's Warilla Pty. Ltd.,
29 Shellharbour Road

WOLLONGONG
Dwyers Pty. Ltd.,
31-33 Crown Street

WOLLONGONG
Boyded (North Wollongong)
Cnr Station & Flinders Streets **Pty. Ltd.,**

WYONG
W. M. Holden
Pacific Highway

NEW SOUTH WALES —

Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- ADELONG
- ALBURY
- ARMIDALE
- BALLINA
- BARADINE
- BARHAM
- BARRABA

- BATHURST
- BEGA
- BELLINGEN
- BLAYNEY
- BOMBALA
- BOURKE
- BOWRAL
- BREWARRINA
- BROKEN HILL
- CANOWINDRA
- CASINO
- CESSNOCK
- COBAR
- COFF'S HARBOUR
- CONDOBOLIN
- COOLAMON
- COOMA
- COONABARABRAN
- COONAMBLE
- COOTAMUNDRA
- COROWA
- COWRA
- CROOKWELL
- CULCAIRN
- DENILIQUIN
- DORRIGO
- DUBBO
- DUNGOG
- EDEN
- FINLEY
- FORBES
- GILGANDRA
- GLEN INNES
- GLOUCESTER
- GOULBURN
- GRAFTON SOUTH
- GRENFELL
- GRIFFITH
- GULARGAMBONE
- GUNDAGAI
- GUNNEDAH
- GUNNING
- GUYRA
- HARDEN
- HAY
- HOLBROOK
- INVERELL
- JERILDERIE
- JUNEE
- KANDOS
- KATOOMBA
- KEMPSEY
- KIAMA
- KURRI KURRI
- KYOGLE
- LEETON
- LISMORE
- LITHGOW
- MACLEAN
- MACKSVILLE
- MAITLAND
- MILTON
- MOLONG
- MOREE
- MORUYA
- MOSS VALE
- MUDGEE
- MULLUMBIMBY
- MUNGINDI
- MURWILLUMBAH
- MUSWELLBROOK
- NARRABRI
- NARRANDERA
- NARROMINE
- NOWRA
- NYNGAN
- ORANGE
- PARKES
- PEAK HILL
- PORT MACQUARIE
- QUIRINDI
- TAMWORTH
- TAREE
- TEMORA
- TENTERFIELD
- TOTTENHAM
- TULLAMORE
- TUMBARUMBA
- TUMUT
- TWEED HEADS
- WAGGA
- WALCHA
- WALLA WALLA
- WALGETT
- WARIALDA
- WARREN
- WAUCHOPE
- WELLINGTON
- WEST WYALONG
- WINGHAM
- WOODENBONG
- YASS
- YOUNG

VICTORIA — Metropolitan Dealers

BENTLEIGH
Boyanton Holden
280 Centre Road

BERWICK
Ross Holden
Princes Highway

BRAYBROOK
Kevin Dennis Holden
272 Ballarat Road

BUNDOORA
Tony Davies Holden
413 Grimshaw Street

BURWOOD
Dustings Hillyer Holden
1200 Toorak Road

CAULFIELD
Booran Holden
1049 Glenhuntly Road

CHELSEA
Harrison Holden
370 Nepean Highway

CHELTENHAM
Balmoral Holden
1212 Nepean Highway

DANDENONG
Graeme Blanchard Holden
Princes Highway

DONCASTER
Lance Dixon Holden
601 Doncaster Road

ELSTERNWICK
Reg. Hunt Motors Pty. Ltd.,
77 Nepean Highway

ESSENDON
Preston Motors (Essendon) Pty. Ltd.,
201-211 Keilor Road

FAWKNER
M. & G. Mantello Holden
1263 Sydney Road

FERNTREE GULLY
Neilson Holden F.T.G.,
980 Burwood Road

FOOTSCRAY
Alan Mance Holden
435 Barkly Street

FRANKSTON
Bayside Holden
140 Dandenong Road

GEELONG
R. & B. Smith Pty. Ltd.,
510 Moorabool Street

GEELONG
Winter & Taylor (Sales) Pty. Ltd.,
23 Cavendish Street

GLEN WAVERLEY
Geoff Brady Holden
565-577 Springvale Road

HASTINGS
McRae Motors Pty. Ltd.,
762 Flinders Road

HEIDELBERG WEST
Arthur Ellis Holden
66 Bell Street

LILYDALE
Noel Dight Holden
Main Street

MORNINGTON
Peninsula Holden
Cnr Nepean Highway & Tyabb Road

OAKLEIGH
Garry & Warren Smith Pty. Ltd.,
1575 Dandenong Road

PRESTON
Graham Hunt Holden
518 High Street

RINGWOOD
Bill Patterson Holden
45-57 Maroondah Highway

SOUTH MELBOURNE
John Martin Holden
132 Sturt Street

WERRIBEE
Ballan Holden
Princes Highway

WEST MELBOURNE
Reg Hunt Holden
577 King Street

VICTORIA — Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars New for Addresses and Telephone Numbers

- ALEXANDRA
- ARARAT
- BACCHUS MARSH
- BAIRNSDALE
- BALLARAT
- BENALLA
- BENDIGO
- BIRCHIP
- BOORT
- CAMPERDOWN
- CASTERTON
- CASTLEMAINE
- CHARLTON
- COBRAM
- COHUNA
- COLAC
- COLERAINE
- CORRYONG
- DAYLESFORD
- DIMBOOLA
- DONALD
- DROUIN
- ECHUCA
- EUROA
- FOSTER
- HAMILTON
- HEATHCOTE
- HOPETOUN
- HORSHAM
- KANIVA
- KERANG
- KOOWEERUP
- KORUMBURRA
- KYABRAM
- KYNETON
- LEONGATHA
- MAFFRA
- MANSFIELD
- MARYBOROUGH
- MILDURA
- MINYIP
- MORTLAKE
- MORWELL
- MURRAYVILLE
- NAGAMBIE
- NHILL
- NULLAWIL
- NYAH
- ORBOST
- OUYEN
- PORTLAND
- QUAMBATOOK
- RAINBOW
- ROCHESTER
- RUTHERGLEN
- SALE
- SEA LAKE
- SEYMOUR
- SHEPPARTON
- ST. ARNAUD
- STAWELL
- SWAN HILL
- TALLANGATTA
- TIMBOON
- TRARALGON
- UNDERBOOL
- WANGARATTA
- WARBURTON
- WARRACKNABEAL
- WARRNAMBOOL
- WODONGA
- WONTHAGGI
- WYCHEPROOF
- YARRAM
- YARRAWONGA

AUSTRALIAN CAPITAL TERRITORY

BELCONNEN
John Wright Holden
Josephson Street

BRADDON
Beazley & Bruce (ACT) Pty. Ltd.
44 Mort Street

PHILLIP
Commonwealth Motors Pty. Ltd.
158 Melrose Drive

QUEENSLAND — Metropolitan Dealers

ASPLEY
Zupps (Aspley) Pty. Ltd.,
1442 Gympie Road

CLEVELAND
Russell Smith Holden
Cnr Queen & Doig Streets

MOOROOKA
John Sivyer Holden
1060 Ipswich Road

MT. GRAVATT
Zupps Motors Pty. Ltd.,
1310 Logan Road

NEWSTEAD
Eagers Retail Pty. Ltd.,
95 Breakfast Creek Road

NUNDAH
Eagers (Northside)
1319 New Sandgate Road

PETRIE
North Pine Motors Pty. Ltd.,
Gympie Road

REDCLIFFE
Village Holden
425 Elizabeth Avenue

SPRINGWOOD
Midways Holden
Pacific Highway & Brennan St.

SALISBURY
Centenary Holden
135 Moggill Road

WINDSOR
Leach Motors
146 Newmarket Road

WYNNUM
Doug Barton Holden
200 Tingal Road

QUEENSLAND — Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- ATHERTON
- AUGATHELLA
- AYR
- BEAUDESERT
- BEENLEIGH
- BEERWAH
- BILOELA
- BOWEN
- BUNDABERG
- CABOOLTURE
- CAIRNS
- CALOUNDRA
- CHARLEVILLE
- CHARTERS TOWERS
- CLERMONT
- CLONCURRY
- CUNNAMULLA
- DALBY
- DIRRANBANDI
- EMERALD
- GATTON
- GAYNDAH
- GLADSTONE
- GOONDIWINDI
- GYMPIE
- INGHAM
- INNISFAIL
- IPSWICH
- JULIA CREEK
- KILCOY
- KINGAROY
- LAIDLEY
- LONGREACH
- MACKAY
- MAREEBA
- MARYBOROUGH
- MILES
- MONTO
- MOURA
- MT. ISA
- MURGON
- NAMBOUR
- NANANGO
- PROSERPINE
- QUILPIE
- ROCKHAMPTON
- ROMA
- SOUTHPORT
- SPRINGSURE
- STANTHORPE
- ST. GEORGE
- TARA

- TOOWOOMBA
- TOWNSVILLE
- TULLY
- WARWICK
- WINTON

SOUTH AUSTRALIA — Metropolitan Dealers

ADELAIDE
City Holden,
203-221 Grenfell Street

ELIZABETH
Peter Page Holden
Elizabeth Way

GLENELG
John H. Ellers Pty. Ltd.,
282 Brighton Road

MALVERN
Claridge Motors Pty. Ltd.,
361-367 Unley Road

MILE END
United Motors Retail
71 West Beach Road

PORT ADELAIDE
Smith Motor Co. Pty. Ltd.,
171 Commercial Road

VALLEY VIEW
Plaza Holden
817 839 North East Road

SOUTH AUSTRALIA — Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- BALAKLAVA
- BERRI
- BURRA
- CEDUNA
- CLEVE
- CRYSTAL BROOK
- CUMMINS
- GLADSTONE
- JAMESTOWN
- KADINA
- KEITH
- KINGSCOTE
- KINGSTON
- LAMEROO
- LOXTON
- MAITLAND
- MALLALA
- MENINGIE
- MILLICENT
- MINLATON
- MT. BARKER
- MT. GAMBIER
- MURRAY BRIDGE
- NARACOORTE
- ORRORO0
- PETERBOROUGH
- PORT AUGUSTA
- PORT LINCOLN
- PORT PIRIE
- QUORN
- RENMARK
- STRATHALBYN
- TANUNDA
- WAIKERIE
- WHYALLA
- WUDINNA
- YANKALILLA

WESTERN AUSTRALIA — Metropolitan Dealers

CANNINGTON
Brian Gardner Holden
1308 Albany Highway

FREMANTLE
Shack Motors
64 Queen Victoria Street

GOSNELLS
Lance Gibbons Holden
2325 Albany Highway

MELVILLE
Melville Motors Pty. Ltd.,
532-536 Canning Highway

MIDLAND
John Goldie Holden
161 Great Eastern Highway

MORLEY
Metro Motors Pty. Ltd.,
212 Walter Road

NAVAL BASE
Shack Motors Cockburn Pty. Ltd.,
Rockingham Road

OSBORNE PARK
North City
Cnr. Scarborough Beach Rd.
& Harbourne Street

PERTH
City Motors
505 Newcastle Street

VICTORIA PARK
Young's Holden
529 Albany Highway

WANNEROO
Phoenix Holden
316 Berriman Drive

WESTERN AUSTRALIA— Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars New for addresses and Telephone Numbers.

- ALBANY
- BEVERLEY
- BOYUP BROOK
- BROOKTON
- BRUCE ROCK
- BUNBURY
- BUSSELTON
- CARNAMAH
- CARNARVON
- COLLIE
- CORRIGIN
- CRANBROOK
- DALWALLINU
- ESPERANCE
- GERALDTON
- GNOWANGERUP
- GOOMALLING
- KALGOORLIE
- KATANNING
- KELLERBERRIN
- KUNUNURRA
- MANDURAH
- MANJIMUP
- MERREDIN
- MOORA
- MORAWA
- NAREMBEEN
- NARROGIN
- NORTHAM
- PINGELLY
- PORT HEDLAND
- QUAIRADING
- WAGIN
- WYALKATCHEM

TASMANIA — Metropolitan & Country Dealers & Service Dealers

HOBART
Motors Pty. Ltd.,
179 Macquarie Street

BURNIE
Motors Pty. Ltd.,
84-89 Marine Terrace

DEVONPORT
Motors Pty. Ltd.,
628 Victoria Parade

KING ISLAND
King Island Motors Pty. Ltd.,
Netherby Road, Currie

LAUNCESTON
Motors Pty. Ltd.,
165 Brisbane Street

SMITHTON
Motors Pty. Ltd.,
16 Nelson Road

ULVERSTONE
Motors Pty. Ltd.,
99 Reibey Street

NORTHERN TERRITORY — Dealers

ALICE SPRINGS
Kittle Bros. (Alice Springs) Pty. Ltd.,
Cnr Wills Terrace & Railway Terrace

DARWIN
Suttons Motors (Darwin) Pty. Ltd.,
Cnr. Mitchell and Knuckey Streets

Section 5

Specification and service station information

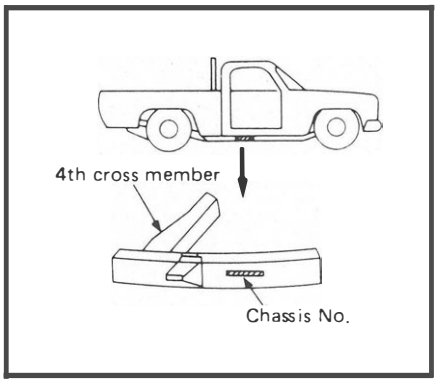
General data

V.I.N. Plate

Installed within the engine compartment.

Chassis Number

Stamped on the right side of the side member near the fourth cross member.



Specifications and technical data

Engine

Petrol— Model G200Z, 4 cylinder, single overhead cam.

Piston displacement	:	1949 cc
Compression ratio	:	8.4:1
Spark Plugs	:	NGK PB 6ES
Spark plug gap	:	0.7—0.8 mm
Oil filter	:	Full flow replaceable cartridge
Oil capacity	:	3.6 litres with filter. 3.2 litres without.
Ignition timing	:	6° BTDC
Firing order	:	1-3-4-2.
Distributor point gap	:	0.4—0.5 mm
Idle speed	:	800 rpm
Valve clearance—Cold	:	Intake 0.15 mm Exhaust 0.25 mm
Carburettor	:	Nikki, Stromberg, 2 barrel downdraft
Coolant capacity	:	7.0 litres

Diesel— Model C223, 4 cylinder

Piston displacement	:	2238 cc
Compression ratio	:	21:1
Combustion chamber type	:	Swirl chamber
Oil capacity	:	6.2 litres with filter, 5.0 litres without.
Injection timing	:	10° BTDC
Injection pressure	:	10.3 MPa
Idle speed	:	675 rpm
Valve clearance—Cold	:	Intake 0.45 mm Exhaust 0.45 mm
Coolant capacity	:	10.3 litres

Engine Number

(Petrol)—Stamped on the right part of the cylinder body near distributor.

(Diesel)—Stamped on the front part of the cylinder body.

Engine Tune-up Data Plate

(Petrol)—Bonnet inside panel.

(Diesel)—Air cleaner duct pipe.

Tyre Inflation Pressure Plate

Rear face of the driver's door.

Colour Identification Number Plate

Installed in the engine compartment.

Clutch

Type	:	Single dry disc with diaphragm spring.
Size	:	215 mm (8.5 in.) diameter
Control	:	Mechanical.

Transmission—4 speed, fully synchronised (MSG 4K).

		Ratio
Reverse	:	3.820 : 1
First	:	4.122 : 1
Second	:	2.493 : 1
Third	:	1.504 : 1
Fourth	:	1.000 : 1

—5 Speed fully synchronised (MSG 5K)

		Ratio
Reverse	:	3.820 : 1
First	:	4.122 : 1
Second	:	2.493 : 1
Third	:	1.504 : 1
Fourth	:	1.000 : 1
Fifth	:	0.855 : 1

Lubricant capacity: 1.25 litres MSG4K
1.55 litres MSG5K

Transmission with transfer case (MSG 4K)
—4 speed, fully synchronised transmission, High-low manually switchable transfer (4 x 4 Models).

Transmission Gear Ratios:

Reverse	:	3.720 : 1
First	:	4.122 : 1
Second	:	2.493 : 1
Third	:	1.504 : 1
Fourth	:	1.000 : 1

Transfer Gear Ratios:
High 1:1 Low 1.87:1
Lubricant Capacity : 2.5 litres

Front Suspension—Independent, torsion bar springs, with stabilizer bar, with double-acting shock absorbers.

Rear Suspension—Semi-elliptic leaf spring, with double-acting shock absorbers. U-bolt tightening torque: 49-58 Nm (35 ~ 45 ft. lbs.)

Front Axle— 4 x 4 Models
Fully Floating
Ratio 4.555:1
4.100:1 (LS Model)
Lubricant capacity: 1.2 litres

Rear Axle— Semi-floating
Ratio 4.551:1
4.100:1 (LS Model)
Lubricant capacity: 1.3 litres

Steering—Variable Ratio Recirculating ball and nut, Ratio 26 ~ 30:1
Lubricant capacity: 0.19 litres

Service Brake—Hydraulic ventilated disc in front, self-adjusting drum brake in rear with vacuum servo
Front: Disc Rear: Leading Trailing

Parking Brake—Mechanical internal-expanding type acting on rear wheels.

Battery— N70Z 12 volts (—ve earth) 70 amp. hrs. (Model with diesel engine)
50 D20R, 12 volts (–ve earth) 50 amp. hrs. (Models with petrol engine)

Fuel Tank Capacities:
All 4 x 4 and crew cabs—50 litre
All 4 x 2 (except crew cab)—72 litre

TYRES AND WHEELS			
TYRE	WHEEL	PLY RATING	DESCRIPTION
185R 14	5.0J × 14	8	Steel Radial.
185SR 14	5.0J × 14	4	Steel Radial.
P195/75R 14	5.0J × 14	4	Steel Radial.
6.50 × 14	5.0J × 14	8	Cross Ply. On/Off Road Pattern.
195R 14	5.0J × 14	6	Steel Radial, On/Off Road Pattern.
195SR 14	5.5JJ × 14	4	Steel Radial, On/Off Road Pattern.

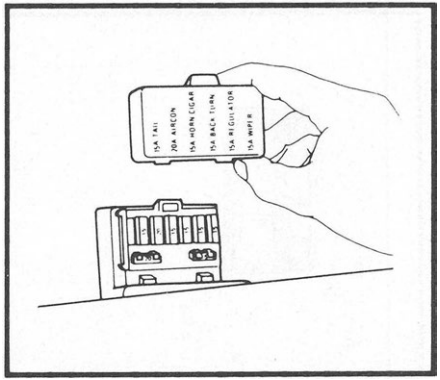
Wheel nut tightening torque:—88 Nm (65 ft. lbs.)

Fuses

The fuse box is installed in position on the left side valance panel within the engine compartment. The fuse box contains six fuse cartridges in use and two spare fuse cartridges.

Applicability	Amperes
Tail lamps, Instrument panel	15
Heater	20
Horn, cigar lighter	15
Back-up lamp, Turn signal lamps	15
Fuel pump (Petrol), Regulator	15
Wiper, Washer and Radio (optional)	15

NOTE: Do not use fuses of higher amperage than those recommended above.



Lamp Bulbs

Used in	Quantity	Power
Headlights Rectangular	2	65/55W
Headlights KB28 Quartz Halogen	2	60/55W
Turn signal lamps (front)	2	23W
Tail and stop lamps	2	23/8W
Turn signal lamps (rear)	2	23W
Licence plate lamp	1	5W
Side turn signal lamps	2	5W
Clearance lamps	2	8W
Dome lamp	1	7.5W
Back-up lamps	2	23W
Speedometer lamps, Combination meter lamp	3	3.4W
Oil pressure indicator lamp	1	3.4W
Parking brake warning lamp	1	3.4W
Charge indicator lamp	1	3.4W
Turn signal indicator lamps	2	3.4W
High beam indicator lamp	1	3.4W
Brake indicator lamp (if equipped)	1	3.4W
4 WD indicator lamp (4 x 4 only)	1	3.4W

Bulb replacement

Due to the different types of lamps, there are several different procedures covering bulb replacement.

Headlights

- Remove the radiator grille.
- Loosen the three screws fixing the sealed beam unit and remove the sealed beam unit by turning the retaining ring counterclockwise.
- To install, fit the bosses on the headlight lens into the grooves so that the top mark side is turned up.

Headlights—Quartz Halogen (where fitted)

1. Remove the radiator grille.
2. Remove the headlight and plug socket with the wire from lamp base.
3. Press in retaining ring against the reflector, turn anti-clockwise and withdraw the lamp holder.
4. Remove the bulb from lamp holder.
5. Insert new bulb so that the lug on the bulb engages in the recess in the lamp holder. Avoid touching the glass of the headlight globe as this drastically reduces the bulb life.
6. Proceed in reverse sequence to removal.

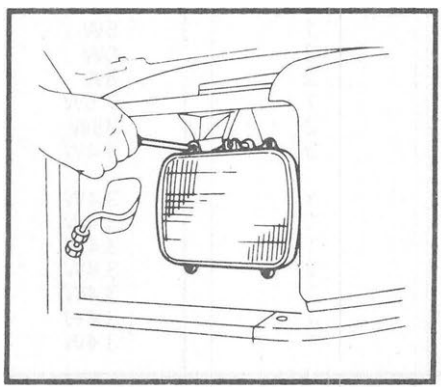
NOTE: Proper aiming of the headlights is most important to assure sufficient illumination of the highway without blinding other motorists. When light aiming is necessary it is advisable to contact a GMH Dealer who has special equipment for this purpose.

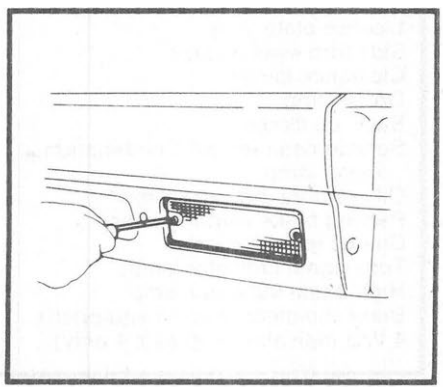
Front combination lamps

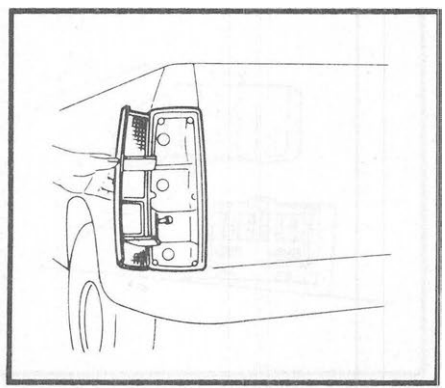
Take out two screws fixing the lens and remove the lens. Remove the bulb from the socket by pushing it in and turning it counterclockwise.

Rear combination lamps

Take out the six screws fixing the lamp lens. Remove the bulb from the socket by pushing it in and turning it counterclockwise.







Side turn signal lamps

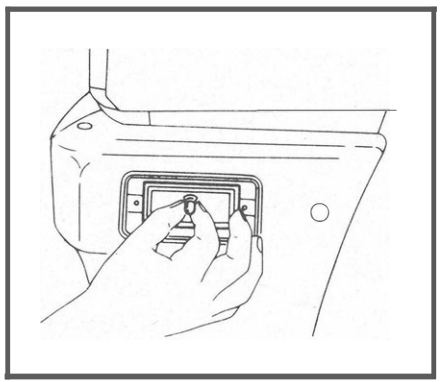
Take out two screws fixing the lens and remove the lens, then pull out the bulb.

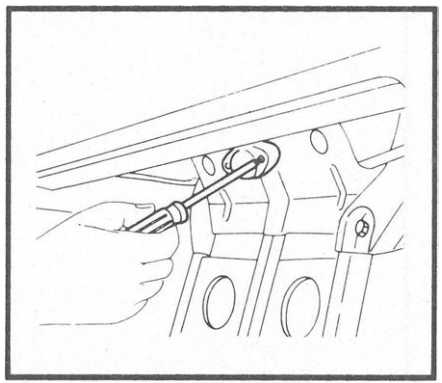
Number plate lamp

Take out the two screws retaining the lamp lens. Remove the bulb from the socket by pulling it.

Dome lamp

Carefully prise off the light cover using a screwdriver. Remove bulb from spring clip. Install new bulb and replace cover.





Section 6

Appearance, maintenance and service

Paintwork

The paint on your Rodeo is finished in acrylic enamel and will stay bright and new-looking provided you wash and wax it regularly, using approved products. Weekly washing is recommended if the vehicle is being used constantly or if it is not parked under cover.

Before you wash the paintwork, thoroughly wash in and around the front and rear windows and check that door drain holes, tailgate drain holes and rocker sill vents are clean. Hose off any heavy dirt on the glass, but leave final cleaning of the glass until last.

Washing tips

Use either cold or warm water — preferably running.

Use clean chamois cloths, sponges or rags (old, clean linen is better than new material for glass).

Don't wash your vehicle in bright sunlight — it will streak.

Grease and oil can be removed with a little kerosene or white spirits. Flush with water afterwards.

If petrol is spilled during refilling, flush with water immediately.

Be sure that your cleaner, polish or wax is suitable for acrylic finishes. AC Delco Wash & Wax from your GMH Dealer is highly recommended.

Insect spots can be removed with a mixture of 220 grams of baking soda in 2 litres of water. Flush clean afterwards. New tyre look can be restored with AC Delco Tyre Black from your GMH Dealer.

Tarnished chrome responds well to AC Delco Polishing Liquid.

Cleaning of interior

Care and cleaning of upholstery

Dust and dirt particles which accumulate on the surface of the interior trim should be removed every few weeks — more often with constant hard driving. This can be done readily with a vacuum cleaner. Before attempting to remove spots and stains from an upholstery fabric, it is necessary to determine as accurately as possible:

1. The type of fabric.
2. The nature and age of the stain.
3. The effect of the stain removal agent upon the colour, structure and general appearance of the trim material.

It is essential that stains be removed from the trim material as soon as possible after they have been made. If they are allowed to remain on the fabric for any length of time they very often become oxidised or set, and removal becomes difficult, if not impossible.

Cleaning P.V.C. Coated Fabrics

Vinyl (P.V.C.) coated fabrics are used for seating, headlining and auxiliary trimming. The grades used vary according to their function. P.V.C. fabrics are generally made with fabric bases upon which synthetic resins are applied. Care of P.V.C. fabrics is a relatively simple but important matter. The surface should be wiped over with a dry cloth during the regular cleaning of the vehicle. Should dirt accumulate and become embedded in the material pattern the following procedure is recommended.

1. Using lukewarm water and soap, work up thick suds on a piece of cheesecloth, and apply to the surface. A soft bristle brush can be used to advantage to remove stubborn stains or dirt embedded in the grain of the material.
2. The operation should be repeated using only a damp cloth and no soap.
3. The trim should then be wiped dry with a soft cloth.

The above cleaning instructions also apply to the rubber floor mats.

IMPORTANT: Where stubborn stains on P.V.C. fail to respond to the above methods, a light application of AC Delco Upholstery Cleaner and Deodorant (Part Number M37222) with a soft cloth will invariably prove satisfactory.

Do not use cleaner excessively.

Cleaning Cloth Trim Material

Where the seats in your vehicle are upholstered with cloth, the following instructions should be observed.

Most loose dirt and dust can be removed by a vacuum cleaner or a soft brush. **Do not use a Whisk Broom or a Coarse Hair Brush.** If normal soiling should take place, it is recommended that the fabric be sponged lightly with warm water containing a detergent and a small amount of ammonia. The fabric should then be rubbed lightly, and if necessary, sponged again to remove anything stubborn. Soak up excess fluid with dry cloth. AC Delco Upholstery Cleaner may be used to advantage, but should be used sparingly.

Cleaning Carpets

Thoroughly brush or vacuum the carpet. In many instances the carpet may require no further cleaning. If the carpet is extremely soiled, thoroughly vacuum it to remove loose dirt; then using AC Delco Car Care Upholstery Cleaner, clean approximately one square foot at a time. After each area is cleaned, remove as much of the cleaner as possible with a vacuum cleaner. After cleaning the carpet, use an air hose to fluff the carpet, pile, then dry the carpet. After the carpet is completely dried, use an air hose to again fluff the carpet pile.

Cleaning Seat Belts

Cleaning of the seat belts can be carried out by using a mild non-abrasive soap and lukewarm water. After washing be sure to thoroughly sponge the washing solution out of the belts.

CAUTION: Do not bleach or dye belts since this may severely weaken belts.

Cleaning glass

The interior glass areas of the vehicle should be cleaned using a non-abrasive household detergent and clean, soft cloth.

Care must be taken when cleaning inside the rear windscreen so as not to damage the heating element.

CAUTION: Many cleaners may be toxic or flammable, or may cause damage to the interior. When cleaning the interior, do not use volatile cleaning solvents such as: acetone, lacquer thinners, enamel reducers, nail polish removers; or such cleaning materials as laundry soaps, bleaches or reducing agents. Never use carbon tetrachloride, gasoline or naphtha for any cleaning purpose.

IMPORTANT: Be sure the vehicle is well ventilated while using any cleaning agents. Follow the manufacturer's recommendations when using such products.

Cleaning of exterior

CAUTION: Care should be used when moving the vehicle after washing, in case water has affected the brakes.

Frequent hosing and washing of the vehicle cannot be overstressed as the most effective precaution against corrosion.

The effects of salts and other corrosive materials from road surfaces can result in accelerated rusting and deterioration of underbody components such as brake and fuel lines, frame, underbody floor pan, exhaust system, brackets, parking brake cables. These corrosive effects, however, can be reduced by periodic hosing of the underbody with plain water whenever the vehicle is being washed. In geographic areas having a heavy concentration of corrosive materials it is recommended that the complete underbody be inspected and washed at least once each year, preferably after a winter's exposure. Particular attention should be given to cleaning out underbody members where dirt and other foreign materials may have collected.

Glass

Special care should be taken to avoid scratching the glass when it is being cleaned. If it is cleaned at the same time as the rest of the vehicle, there is a possibility that particles of grit will cause fine scratches. An accumulation of these on the windshield can make night driving very unpleasant. Flush off any heavy mud deposits on the glass when washing the body, but leave the final cleaning and polishing until afterwards.

Each section of glass should then be washed in turn, making sure that the water, its container and the sponge are quite clean and free from grit. If the glass is very dirty, a little household ammonia mixed with warm water will help. Clean old linen cloth is better than new material for polishing glass.

Insect spots

Insect spots on the paint finished parts of the vehicle can be easily washed off by using a solution containing 2 litres of water in which approx. 220 grams of baking soda (Bicarbonate of Soda) has been dissolved. Flush the washed parts with clean water. After washing and drying, park the vehicle in a shaded area.

Washing

The acrylic enamel finish on your vehicle is superior to ordinary finishes and will stay bright and new looking for years with little or no polishing, provided it is given a reasonable amount of regular washing to keep off road grime.

To preserve the original paint finish of the vehicle, it is essential that it is kept clean by frequent washing. Washing not only removes dirt and road grime that settles on the vehicle, but also dilutes acids which accompany such grime, in particular, salt from air or sea spray encountered in coastal areas which often become trapped in crevices. Tree sap, road tar, excretion from insects and industrial fall out often contain harmful chemicals and other foreign matter that may permanently damage the paint finish of the vehicle. These should be removed without delay, using an effective removal agent.

Regular washing

If the vehicle is in continuous use, it should be washed at least once a week with either cold or warm water (preferably running water), using clean chamois leathers, sponges or rags free from dirt or grit likely to scratch the paint finish. It is good practice to first hose the vehicle to remove as much of the grit and grime as possible before swabbing the surface. Do not wash the vehicle under bright sunlight when high temperatures are being experienced, as this will result in a streaky, watermarked finish.

AC Delco Wash and Wax (Part No. M37226) loosens road grime to make washing easier and leaves paint shining clean.

NOTES:

1. Calcium chloride and other salts, road oil and tar, tree sap, chemicals from factory chimneys and other foreign matter may damage any known automobile finish if allowed to remain in contact with the paint film.
2. Some chemical cleaners used for removing road oils and tars from painted surfaces have been found to be detrimental to acrylic finishes. When purchasing a cleaner, polish or wax, ensure that it can be safely used on an acrylic finish.
3. Grease and oil, and even tar if it's fresh, can be removed from the finish with a little Kerosene or White Spirits. As a precaution against staining, wash and polish as soon as possible the area from which the foreign matter has been removed.

IMPORTANT: If petrol is spilt on the paint finish when refilling, owners are advised to ensure that it is flushed off with clean water immediately. The reason is that petrols currently in use have a tendency to stain or soften new paint finish during the weathering out period, particularly when the vehicle is exposed to high temperatures.

Paintwork inspection

Regular inspection of the vehicle should be made for scratch marks, cracks or damaged areas, all of which could develop rust and thus affect paint finish. Any deep scratches, cracks or breakdown in the finish should be repaired without delay. Care should be taken to ensure that any rusting is counteracted immediately, otherwise rust "creep" will extend beyond the damaged area. This applies particularly in sub-tropical areas or coastal districts, where the moist or salt-laden atmosphere accelerates rusting if it is allowed to develop through neglect. The paint finish of the vehicle gives a very high degree of protection against the weather, but it should be realised that wear and deterioration occur when the vehicle is exposed to elements for prolonged periods.

The vehicle therefore should be garaged whenever possible.

Chromium plated parts

Generally, a rub with a clean soft cloth will be all that is necessary to remove dust from the chromium plated parts. However, if the chromium is covered with dead insects or mud, it should be washed with warm soapy water and then cleaned with AC Delco Polishing Liquid (Part Number M37221). This polish should also be used if the chromium shows signs of tarnishing. Do not use ordinary metal polishes as they may contain abrasives which would ruin the plating.

Polishing

Even though the acrylic enamel finish on your vehicle is more durable than ordinary enamels, under certain conditions you may wish to polish your vehicle to provide maximum protection against road dirt and industrial fall out, etc. Also, the application of a polish may be required to remove foreign matter which is not normally removed from vehicles by washing. Over a period of time, such foreign matter may build up on the paint surface to the detriment of its overall appearance.

Do not attempt to apply a polish without first washing to remove existing loose grit, surface dirt, dust or grease, etc.

Either AC Delco Polishing Liquid (Part No. M37221) or AC Delco Polishing Cream (Part No. M37220) will quickly and easily impart a deep, rich shine when used as directed on the container.

Tyres

Sponging with cold water is all that is necessary for normal cleaning of the tyres. Oil and grease can, and should, be removed with soap and water or detergent. For tar or other substances, a mild abrasive, such as mechanics' hand soap or kitchen cleaning powder, may be used if necessary. Thoroughly wash the tyres with water to finish. Petrol must not be used for cleaning tyres.

New Tyre look can be restored by using Tyre Black.

Replacement Parts and Accessories

GM Parts & Accessories Division of General Motors-Holden's Limited is established to distribute GM Parts and Accessories through Authorized Dealers.

GM Parts and Accessories are manufactured to the high standards of quality established for General Motors-Holden's vehicles—to the correct specifications and of the same materials as the original parts on your vehicle. They are, therefore, warranted, and it is definitely in your interest to specify these quality parts and accessories.

Engine oil and filter recommendations

- Use SE engine oil for petrol engine, and CC or CD engine oil for diesel engine (See Section "Recommended Lubricants".)
- Change oil after first 1,000 km and each 5,000 km thereafter, but more often under the following conditions:
  —driving in dusty conditions
  —extensive idling
  —short-trip operation at freezing temperatures (engine not thoroughly warmed up).
- Operation in dust storms may require an immediate oil change.
- For petrol engine, replace the oil filter at the first oil change, and every second oil change thereafter. For diesel engine, replace the oil filter element after the first 1,000 km, and thereafter every 15,000 km. See your dealer for advice on the frequency of oil and filter changes under unusual driving conditions.
  The above recommendations apply to the first change as well as subsequent oil changes. The oil change interval for your engine is based on the use of SE oils for petrol engine (CC or CD for diesel engine) and quality oil filters. Oil change intervals longer than those listed above will seriously reduce engine life and may affect entitlement under the provisions of the New Vehicle Warranty. Check the oil level frequently during the break-in period since higher oil consumption is normal until the piston rings become seated.

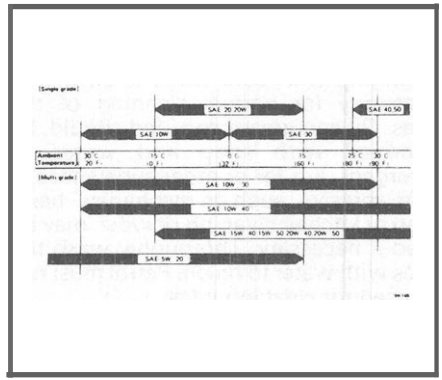
NOTE: Non-detergent and other low quality oils are specifically not recommended. The use of SE engine oils for petrol engine (CC or CD for diesel engine) and proper oil and filter change intervals promote continued reliability and performance from your engine.

The proper oil viscosity helps assure good cold and hot starting.

Recommended viscosity

Select the proper oil from the "Recommended Lubricant".

Use the correct oil viscosity for existing ambient temperatures as shown.

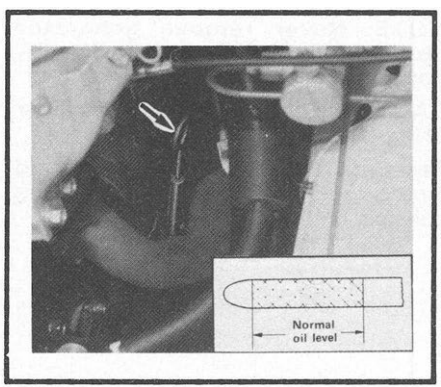


Checking oil level

The engine oil should be maintained at proper level. The best time to check it is before operating the engine or as the last step in a fuel stop.

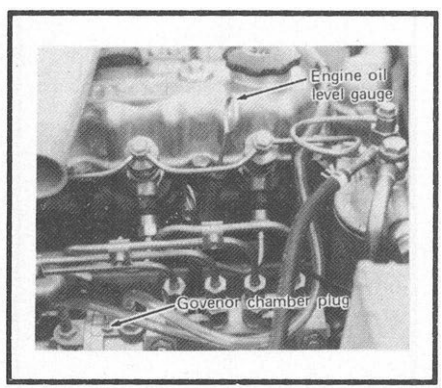
This will allow the oil accumulation in the engine to drain back in the crankcase. To check the level, remove the oil gauge rod (dip stick), and wipe it clean. It is quite normal with a petrol engine that no indication of oil is visible when oil gauge rod is first removed. Do not reinsert rod for 30 seconds, or if the engine has just stopped running for two minutes. Reinsert rod firmly for an accurate reading. The oil gauge rod has marking which indicates the normal oil level.

If the oil level is lower than the marked area, it indicates the need for replenishment. The oil level should be maintained within the level mark at all times.



Lubrication of governor chamber (Diesel)

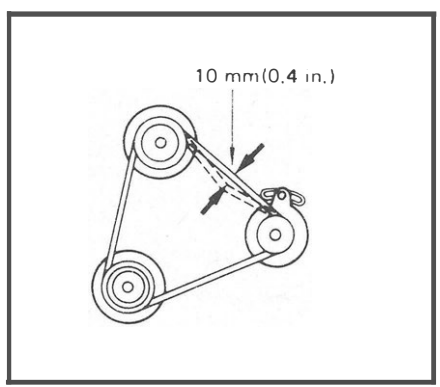
Remove the plug from the governor chamber and apply a few drops of vacuum cylinder oil to the governor diaphragm.



Drive belt

Drive belt should be checked at the first 1,000 km and every 10,000 km thereafter for proper tension. A loose belt will affect water pump and generator operation.

The fan belt tension is normal if the belt gives a lateral deflection of about 10 mm (0.4 in.) when a good finger pressure is applied to the midway between the fan pulley and generator pulley. To adjust the fan belt tension, turn loose the bolt on the generator bracket and on the adjust plate and pivot the generator as required.



Valve clearance

Incorrect valve clearance will result in increased engine noise and lower engine output thereby adversely affecting engine performance. Re-tighten rocker shaft nuts before checking and adjusting valve clearance.

Manifold, cylinder head mounting

Manifold mounting nuts and cylinder head bolts should be carefully adjusted to correct torque to compensate for compression of gasket.

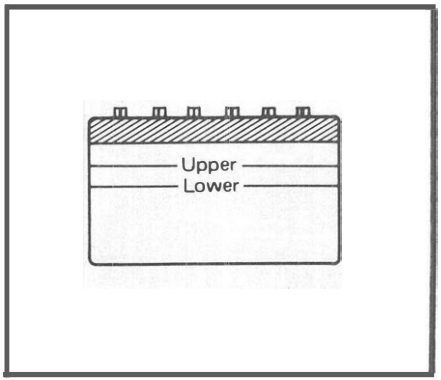
Manifold mounting nuts torque:
20 Nm. (14 ft-lbs)

Cylinder head bolt torque:
98 Nm. (72 ft-lbs) Petrol engine
78 Nm. (58 ft-lbs) Diesel engine

Electrical system

Battery Care—Check the battery electrolyte every month. If the levels are lower than the specified level add colourless and odourless drinking water or distilled water to bring to the proper level.

In freezing weather the vehicle must be driven after adding water to properly mix it with the electrolyte and prevent freezing.



CAUTION: Never expose battery to open flame or electric spark—chemical action generates hydrogen gas which is flammable and explosive. Don't allow battery fluid to contact skin, eyes, fabrics, or painted surfaces—fluid is a sulphuric acid solution which could cause serious personal injury or property damage. Wear eye protection when working with battery.

Battery Terminals—The battery cable terminals must be clean and tight. When corrosion appears on the terminals they should be cleaned in a solution of baking soda and water or ammonia and water. After cleaning, the top of the battery should be flushed off with clean water.

Generator—The connections in the entire charging system must be kept tight and free from corrosion or anything that will cause high resistance in the circuit.

NOTE: Never remove generator "battery" lead without first disconnecting battery ground cable.

CAUTION: Do not short across or attempt to polarise system.

Starting Motor—Check the solenoid mounting and starting motor mounting bolts periodically.

Fuel system

Carburettor (Petrol engine)

Tighten the carburettor to manifold and the manifold to cylinder head stud nuts to prevent air leaks. Setting and adjusting of the carburettor has a definite bearing on the engine performance and the contents of the exhaust gases. As the carburettor is intricate in design and necessitates the use of various instruments for adjustment, avoid overhauling and random adjustment and have your GMH dealer or distributor check and adjust it regularly.

Fuel Filter (Petrol Engine)

The fuel filter is installed on the frame side member near the fuel tank. It should be replaced every 20,000 km.

It is clipped in position and can be removed easily by disconnecting two fuel hoses.

Ensure that new filter is installed correctly.

Fuel Filter (Diesel Engine)

This filter should be replaced every 15,000 km.

1. Loosen the fuel filter by turning it counter clockwise, and then remove it.
2. Wipe clean the seating face of the filter cover.
3. Lightly oil the O ring on the new filter and install it by turning clockwise. Tighten according to instructions on filter.
4. Bleed fuel system according to instructions given on page 47 of this handbook.

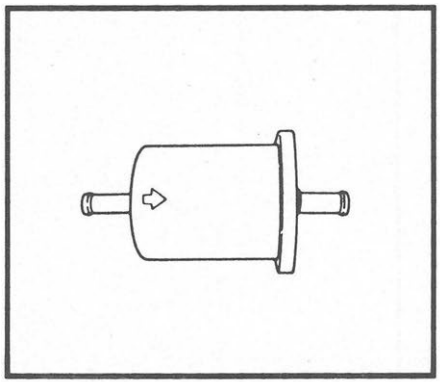
Accelerator Linkage

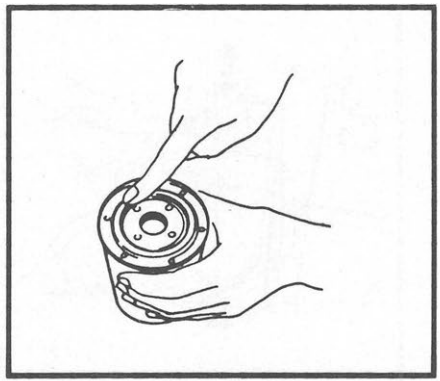
Check, adjust and lubricate with engine oil every 12 months or 20,000 km.

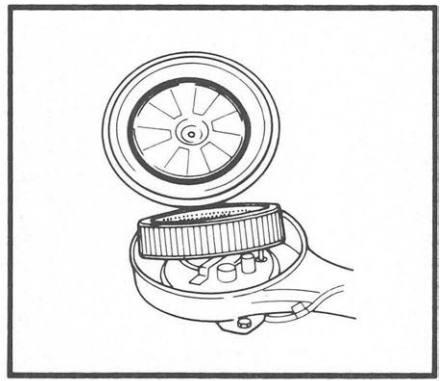
Air Cleaner

The air cleaner uses a viscous type element so that servicing is unnecessary until 40,000 km of replacement interval is reached. However, element replacement intervals should be shortened accordingly if the vehicle is operated mainly in dusty areas.

NOTE: It is strongly advised to use genuine GMH air cleaner element at the time of replacement as it is a viscous type and differs from conventional dry type air cleaner in construction and function.







CAUTION: Do not attempt to clean element even if it is fouled as the element is designed to provide normal filtering efficiency before it becomes due for replacement.

CAUTION: The engine air cleaner should be installed at all times unless temporary removal is necessary during repair or maintenance of the vehicle, because in the absence of the air cleaner, backfiring could cause a fire in the engine compartment.

Electrical Fuel Pump (Petrol Engine)

The electrical fuel pump should be checked regularly to make sure the setting screws and rubber hoses are tight.

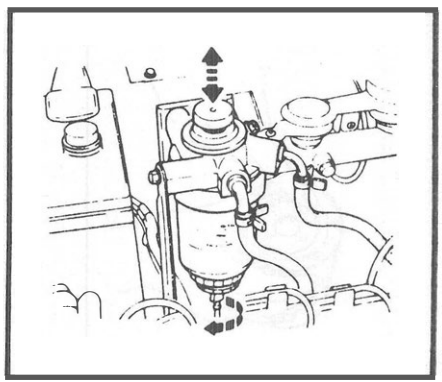
Draining of water separator (Diesel Engine)

Loosen the drain plug by turning it counter-clockwise (approximately five turns) and operate the priming pump up and down until fuel is filled up into the water separator.

After draining, securely tighten the drain plug by turning it clockwise and operate the priming pump up and down several times.

After starting the engine, check to see that no fuel leaks from the drain plug. Also check to see that the fuel filter indicator has turned off.

If water separator requires frequent draining, have the fuel tank drained for removal of water at your GMH dealer.



Engine cooling system

NOTE: Supplemental inhibitors or additives claiming to provide increased cooling capability that have not been specifically approved by GMH are not recommended for addition to the cooling system. These additives may be detrimental to the efficient operation of the system, and may represent an unnecessary operating expense.

The cooling system must be checked and serviced regularly if the engine is to operate efficiently.

Corrosion protection

To protect components of the cooling system from corrosion the system should be filled or topped up only with premixed coolant comprising clean water and permanent type (ethylene glycol) anti-freeze fluid to GM 1899M specification. A 50-50 mixture is recommended, however, a mixture of 1 part anti-freeze to 2 parts water would be acceptable.

If you live in an area where water has a high level of mineral or chemical content, use rainwater or distilled water.

If you need to use bore water in an emergency—change it for the above coolant made with clean water as soon as possible.

Follow the directions on the pack when adding anti-freeze solution.

Coolant checking

To avoid the danger of being scalded, remove the radiator cap carefully when engine has been running so that pressure can escape slowly. This is necessary when the engine has been running recently. If coolant is added it should be clean and have a low lime content.

Temperature

Should irregularities in the coolant temperature occur, for example if the temperature indicator light comes on, the coolant level should be checked immediately and topped up if required. Refer to Engine Overheating instructions on page 44 of this manual.

Draining and flushing

Every twelve months or 20,000 km drain and refill the radiator.

Fill with a premixed coolant comprising clean water and anti-freeze solution.

WARNING: Corrosion inhibitors and anti-freeze solutions are poisonous.

REMINDER: Replace and properly tighten all drain points before refilling.

Do not use cleaning chemicals to loosen scale unless the cooling system is afterwards thoroughly reverse flushed, otherwise loosened scale may clog the radiator water passages.

For complete removal of loose sediment and sludge from the radiator and water jacket, pressure flushing with an air and water gun is recommended, and as this method of flushing requires special equipment we suggest you have this work carried out by your GMH Dealer.

Use of anti-freeze fluid

Where a vehicle is to be parked overnight or operated for any length of time in regions where temperatures of 0°C or below are encountered (e.g.—snow areas), the recommended brand of anti-freeze fluid should be used in the cooling system in accordance with the instructions specified.

The recommended anti-freeze fluid is permanent type (ethylene glycol) to GM 1899M. Before adding, make a thorough check of the cooling system.

Do not mix different types of anti-freeze as they may be incompatible. If a different type has been used in the radiator, flush and refill with coolant before adding the GM 1899M anti-freeze.

Cold weather draining

If the recommended brand of anti-freeze fluid is not available, the radiator, and cylinder case, MUST be drained before parking to prevent the possible bursting of the radiator, or cracking of the cylinder block which can occur if the coolant freezes. However, damage could be caused to the heater core which may not be drained of coolant.

Cooling System Service

Every year, the cooling system should be serviced as follows:

1. Wash radiator cap and filler neck with clean water.
2. Pressure test system and radiator cap for proper pressure holding capacity. 100 kPa (15 psi).
3. Tighten hose clamps and inspect all hoses. Replace hoses whenever cracked, swollen or otherwise deteriorated.
4. Clean frontal area of radiator core.

Every year or 20,000 km, whichever first occurs, the cooling system should be drained and refilled as follows:

1. Run engine, with radiator cap removed, until normal operating temperature is reached.
2. Drain coolant through the radiator drain valve. (To speed this operation, the drain plug in block can also be removed.)
3. Close valve (install block drain plug, if removed) and add sufficient water to fill system.
4. Run engine, drain and refill the system, as described in steps 1, 2 and 3, a sufficient number of times until the drained liquid is nearly colourless.
5. Allow system to drain completely and then close radiator drain valve tightly. (Install block drain plug, if removed.)
6. Fill with premixed coolant—of water and anti-freeze solution meeting GM specification 1899M.
7. Run engine, with radiator cap removed, until normal operating temperature is reached.
8. Check and adjust coolant to proper level and install radiator cap.

NOTE 1: It is the owner's responsibility to keep the freeze protection at a level commensurate with the temperatures which may occur in the area of vehicle operation.

NOTE 2: Alcohol or methanol base coolants are not recommended for your Holden Rodeo KB light-duty truck at any time.

Thermostat

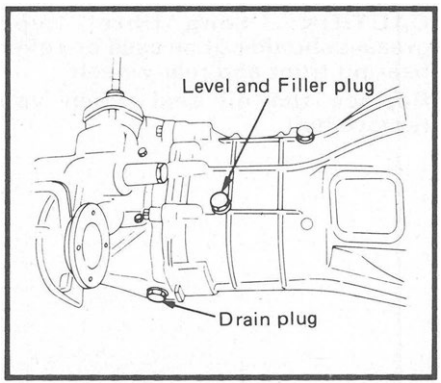
The cooling system is protected and controlled by a thermostat installed in the engine coolant outlet to maintain a satisfactory operation temperature of the engine. This thermostat is designed for continuous use through both winter and summer and need not be changed seasonally.

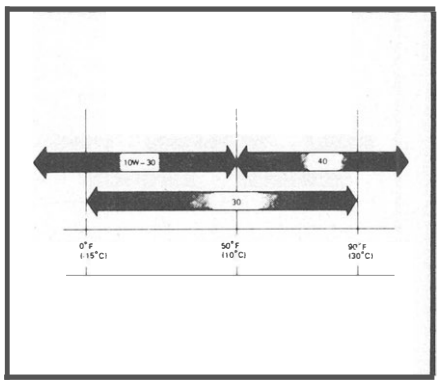
Manual transmission oil

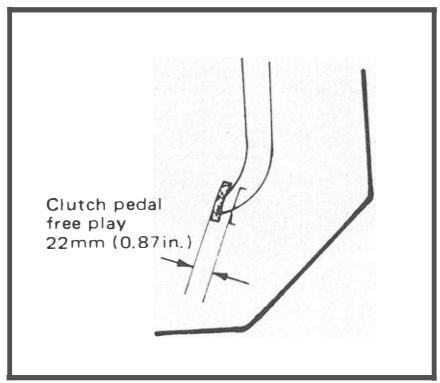
Replace oil at first 10,000 km and every 40,000 km thereafter. Every 10,000 km or 4 months, whichever occurs first, check at operating temperature and fill as necessary to level of filler plug hole. Use engine oil of the correct oil viscosity for existing ambient temperatures as shown.

Clutch

The clutch pedal free travel should be checked every 12 months or 20,000 km. The clutch pedal free play is normal if it is about 22 mm (0.87 in). Lubricate the clutch pedal bushing every 12 months or 20,000 km with water resistant EP chassis lubricant.



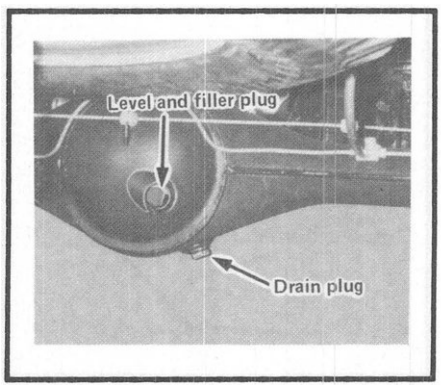


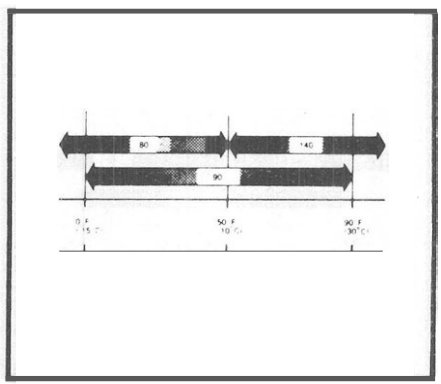


Rear axle

Replace lubricant at first 10,000 km. Every 10,000 km or 4 months, whichever occurs first, check lubricant level and add lubricant. Fill to level of filler plug hole, if necessary. Use GL-5 Gear Lubricant of viscosity shown.

Replace lubricant every 40,000 km. If vehicle is operated in exceptionally heavy work or at continuous high speeds, the lubricant should be changed every 20,000 km. It may be necessary to change lubricant more often if vehicle is used off road in dusty areas.





Propeller shaft

Check propeller shaft flange bolts for proper torque (25Nm/18 ft-lbs).

Wheel bearings

Front and Rear

NOTE: Use wheel bearing grease HN1227 or equivalent. This is a premium high melting point lubricant.

Remove the front wheel hub to lubricate the bearings. To repack rear wheel bearings, proceed as follows: Remove rear axle shaft and bearing holder, wipe clean all traces of used grease and then apply new grease.

The bearings should be thoroughly cleaned before repacking with grease. Front and rear wheel bearings should be lubricated every 40,000 km.

CAUTION: ''Long fibre'' type greases should not be used on roller bearing front and rear wheels.

Replace the oil seal when you remove hub.

Brake master cylinder

Every 10,000 km or 4 months, whichever occurs first, check master cylinder fluid level. If the fluid is low in the reservoir, it should be filled to the level mark on the reservoir with recommended Hydraulic Brake Fluid.

If the brake master cylinder with level indicator is equipped, the periodic fluid level check is not necessary.

When the brake indicator light on the instrument panel turns on while driving (the key in "ON" position), the fluid reservoir should be filled to the level mark on the reservoir with recommended Hydraulic Brake Fluid.

Brake pedal

The brake pedal travel should be checked every 12 months or 20,000 km. The standard brake pedal free play is about 7 ~ 10 mm (0.3 ~ 0.4 in) when engine stopped.

The brake pedal effective travel is normal if a clearance of about 95 mm (3.7 in) is maintained between the pedal and floor when the brake pedal is depressed all the way down.

If the brake pedal effective travel or the brake action is abnormal, have your GMH dealer or distributor check the brake system at your earliest convenience. Lubricate the brake pedal bushing every 12 months or 20,000 km with water resistant EP chassis lubricant.

Brake and clutch pedal springs

Lubricate brake and clutch pedal springs every 20,000 km or 12 months with chassis lubricant.

Parking brake

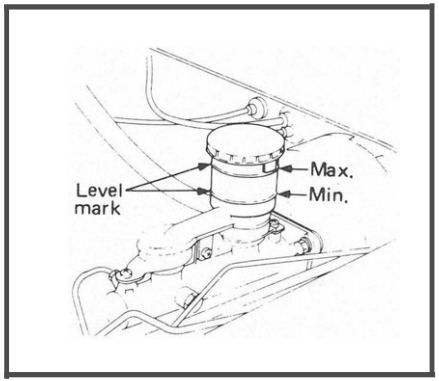
Every 10,000 km or 4 months whichever occurs first, clean and lubricate all parking brake linkage with water resistant EP chassis lubricant.

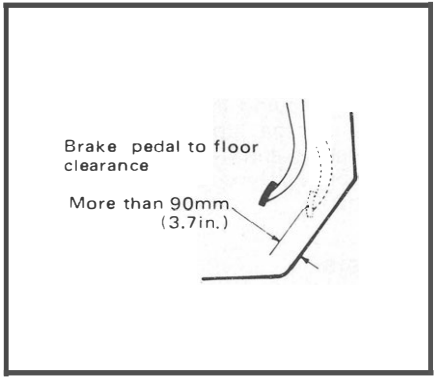
Check to be sure that the rear wheels are locked when the parking lever is pulled up. The parking brake lever travel is normal if it is between 13 ~ 14 notches when pulled all the way up. Check any play on actuater lever.

Steering

The steering gear is factory-filled with steering gear lubricant. Check lubricant every 20,000 km or 12 months, whichever occurs first. Change the lubricant every 60,000 km. Use GL5 Gear Lubricant of viscosity shown.

NOTE: Do not use EP Chassis Lube to lubricate the gear. DO NOT OVER-FILL the gear housing.





Steering linkage and suspension

Maintain correct front end alignment to provide easy steering, longer tyre life, and driving stability.

Check control arm bushings and ball joints for wear.

Lubricate tie rods, relay rods, idler arm, upper control arms, and ball joints at fittings with water resistant EP chassis lubricant every 10,000 km or 4 months, whichever occurs first.

Keep spring to axle U bolts and shackle bolts properly tightened (See specifications for torque recommendation).

Hood latch and hood hinge

Every 10,000 km lubricate hood latch assembly and hood hinge assembly as follows:

1. Wipe off any accumulation of dirt or contamination on latch parts.
2. Apply lubricant to hood latch pin and cam.
3. Apply light engine oil to all pivot points in release mechanism.
4. Lubricate hood hinges.
5. Make hood hinge and latch mechanism functional. Check to assure the assembly is working correctly.

Body lubrication

Normal use of a truck causes metal-to-metal movement at certain points in the cab or body. Noise, wear and improper operation at these points will result when a protective film of lubricant is not provided.

For exposed surfaces, such as door checks, door lock bolts, lock striker plates, dovetail bumper wedges, etc., apply a thin film of light engine oil.

Where oil holes are provided in body parts a dripless oil can be safely used, but any lubricant should be used sparingly, and after application all excess should be carefully wiped off.

The seat adjusters and seat tracks, sometimes overlooked, should be lubricated with water resistant EP Chassis lubricant.

There are other points on bodies which may occasionally require lubrication and which are difficult to service. Window regulators and controls are confined in the space between the upholstery and the outside door panel. Turn up the trim without removing it completely as it is bonded at the upper section. Door weatherstrips and rubber hood bumpers should be lightly coated with a rubber lubricant.

Chassis

Lubricate front suspension, steering linkage and propeller shaft. Grease fittings are located on the tie-rods, relay rods, ball joints and universal joints.

Underbody maintenance

The effects of salt and other corrosive materials used for ice and snow removal and dust control can result in accelerated rusting and deterioration of underbody components such as brake and fuel lines, frame, underbody floor pan, exhaust system, brackets, parking brake cables, etc. These corrosive effects, however, can be reduced by periodic flushing of the underbody with plain water. In geographic areas having a heavy concentration of such corrosive materials, it is recommended that the complete underbody be inspected and flushed at least once each year, preferably after a winter's exposure. Particular attention should be given to cleaning out underbody members where dirt and other foreign materials may have collected.

Tyres

The factory installed tyres on your truck are selected to provide the best all round tyre performance for all normal operation.

Only those tyres of the size shown in the Tyre Inflation Table on the following page are recommended for use on your vehicle. Use of any other size of tyre may seriously affect ride, handling, ground clearance, tyre clearance, and speedometer calibration. To achieve best all round vehicle handling performance, belted tyres and bias ply tyres should not be mixed on the same truck. Because of possible adverse effects on vehicle handling, do not mix radial ply tyres with other type tyres on the same vehicle.

NOTE: Refer to the recommended tyre inflation pressures on label attached to the rear face of the driver's door.

Tyre traction

A decrease in driving, cornering, and braking traction occurs when water, snow, ice, gravel, or other material is on the road surface. Driving practices and truck speed should be adjusted to the road conditions.

When driving on wet or slushy roads, it is possible for a wedge of water to build up between the tyre and road surface. This phenomenon, known as hydroplaning, may cause partial or complete loss of traction, which adversely affects vehicle control and stopping ability. To reduce the possibility of traction loss, the following precautions should be observed.

1. Slow down during rainstorms or when roads are slushy.
2. Slow down if road has standing water or puddles.
3. Replace tyres when tread depth becomes 1.6 mm (1/16").
4. Keep tyres properly inflated.

Inflation pressure

Standard inflation pressures for tyres are listed below.

The use of improper tyre inflation pressures can affect tyre life and load carrying capacity, and may affect vehicle handling. Inflation pressures should be checked at least once a month (and preferably more often) to ensure that the right amount of air is contained in the tyres. With regard to tyre life, too little air pressure allows abnormal deflation of the tyre causing excessive operating temperatures, while too much air pressure prevents normal deflection, making the cord body more vulnerable to road impacts.

Use of the optional reduced inflation pressure shown in the "Tyre Inflation Table" is allowable only when the vehicle is unloaded (i.e. carrying no cargo).

When operating at loads greater than the optional reduced load, the inflation pressure must be increased to the standard inflation for full rated loads.

Tyre rotation

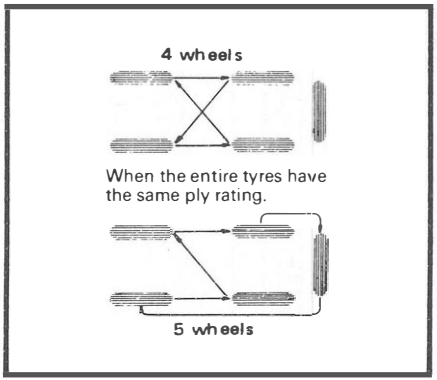
The rotation of truck tyres will minimise tyre trouble and produce longer tyre life. With rotation, accelerated and irregular tyre wear on any one particular tyre will be spread out over the entire set, and replacement frequency will be reduced. Tyre wear may also contribute to such trouble as poor handling and shimmy.

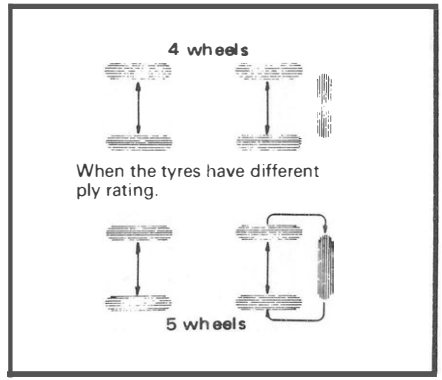
A rotation sequence that moves the front tyres to the rear is a general recommendation. Due to different loading conditions on the wheels, new tyres which are run in on the front wheels usually produce the greatest overall tyre life. To equalise wear it is recommended that the tyres be rotated every 10,000 km. Upon rotation, tyre pressure must be adjusted (front and rear) in accordance with the recommendations for inflation pressure.

Wheel nut–torques

On a new vehicle or after the wheel has been changed, the wheel nut torque must be checked at 1,000 km and every 4 months or 10,000 km whichever occurs first.

Torque: 88Nm (65 ft. lbs.).





TYRE INFLATION CHART

kPa

TYRE		FRONT		REAR	
		Up to 2 Pass. + 250 kg	Up to Maximum Load	Up to 2 Pass. + 250 kg	Up to Maximum Load
185 R14-8 LT	AXLE LOAD kg	700	850	800	1600
	TYRE PRESSURE kPa	250	250	250	425
185 SR 14-4	AXLE LOAD kg	700	850	800	950
	TYRE PRESSURE kPa	200	200	200	220
P195/75 R14-4	AXLE LOAD kg	700	850	800	950
	TYRE PRESSURE kPa	200	200	200	240
6.50-14-8 LT	AXLE LOAD kg	750	950	800	1600
	TYRE PRESSURE kPa				
(ON/OFF ROAD)	HIGHWAY	225	225	225	425
	MUD, SAND	155	225	155	425
195 R14-6 LT	AXLE LOAD kg	750	950	800	1590
	TYRE PRESSURE kPa				
(ON/OFF ROAD)	HIGHWAY	230	230	230	350
	MUD, SAND	160	230	160	350
195 SR14-4 (ON/OFF ROAD)	AXLE LOAD kg	750	950	800	950
	TYRE PRESSURE kPa				
	HIGHWAY	200	200	200	220
	MUD, SAND	130	200	130	220

Psi Pounds/ Sq. in	Kilo Pascals (approx.)
15	103
16	110
17	117
18	124
19	130
20	137
25	172
30	206
35	241
40	275
45	310
50	344
55	379
60	413
65	448
70	482

NOTE: **Tyre inflation pressure may increase as much as 50 kPa (6 psi) when hot: after vehicle has been driven 15 km or at speeds of more than 100 km/h.**

Particular items for 4 x 4 models

Most lubrication recommendations and procedures for 4 wheel drive-equipped vehicles are the same as for corresponding components of conventional drive vehicles. In addition, the following items require lubrication at the intervals mentioned.

Front propeller shaft

Lubricate sliding yoke with water resistant EP chassis lubricant and universal joints with MoS_2 contained chassis lubricant every 12 months or 20,000 km. Every 4 months or 10,000 km, check propeller shaft flange-to-pinion bolts for proper torque of 25 Nm (18 ft. lbs.).

Front axle

Replace lubricant at first 10,000 km and every 40,000 km thereafter. If vehicle is operated in exceptionally heavy work or at continuous high speeds, the lubricant should be changed every 20,000 km. It may be necessary to change lubricant more often if vehicle is used off road in dusty areas.

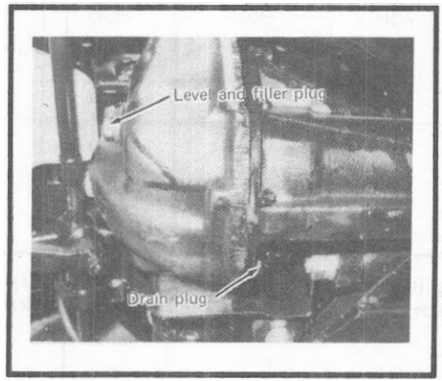
Every 10,000 km or 4 months, whichever occurs first, check lubricant level and add lubricant if necessary. Fill to level of filler plug hole. Use GL-5 Gear Lubricant of viscosity shown on page 88. (Refer to Rear axle.)

Transmission with transfer case

Replace oil at first 10,000 km and every 40,000 km thereafter. Every 10,000 km or 4 months, whichever occurs first, check at operating temperature and fill as necessary to level of filler plug hole. Use engine oil of the correct oil viscosity for existing ambient temperatures as shown on page 80. (Refer to Manual transmission.)

Free wheeling hub

Clean and lubricate free wheeling hub at the same time the front wheel bearing is serviced. Use wheel bearing grease GM HN1227 or equivalent.



Recommended lubricants

In order to obtain maximum performance and longest service life from your Holden Rodeo KB, it is very important to use lubricants selected according to the chart. The lubrication intervals in the maintenance schedule and application of new car warranty are based on the use of recommended lubricants as given in this chart which will serve as a guide for selecting lubricants of proper brand name.

Item	Lubricant/Fluid Specification
Diesel Engine	Diesel Engine Oil CC or CD Grade to GMH HN1455 Specification
Petrol Engine	SE Grade Engine Oil To GMH HN1455 Specification. See page 80 for Grades.
Injection Pump Governor (Diesel Engine)	Vacuum Cylinder Oil to GMH HN1746 Specification
Rear Axle Steering Box Front Axle (4 × 4 model)	Gear Oil GL5 grade to GMH HN1386 or HN1187 Specification
Wheel Bearings	Wheel bearing or Multipurpose Grease to GMH HN1227 Specification
Brake and Clutch Pedal Pivots, Park Brake Linkages and Guides, Sliding Yoke, etc.	Multipurpose Grease to GMH 1147 Specification
Universal Joints	MOS_2 contained Type Grease to GMH HN1416 specification
Hydraulic Brake and Clutch System	Hydraulic Brake fluid to GMH HN1796 Specification
Engine Cooling System	Permanent Anti-Freeze Type (Ethylene Glycol) to GMH 1899M Specification
Chassis	Water Resistant EP Type Chassis Lubricant to GMH HN 1271 Specification

Guardian Maintenance Plan

The 3-Step Service Concept

The fundamental points are:

1. A basic service interval period of 6 months or 10 000 kilometres whichever occurs first.
2. A "step" principle of 3 correlated services.
3. The frequency of these services is:
   "A" service items — Serviced every 6 months or 10,000 km
   "B" service items — Serviced every 12 months or 20,000 km
   "C" service items — Serviced every 24 months or 40,000 km

Service Designation	—A—	—B—	—C—
Items	Group I *	Groups * I & II	Groups * I, II & III

Up to the 3rd step in the items programmed the earlier steps are included.
The total time/distance range of this Guardian Maintenance Schedule is 66 months or 110,000 kilometres.

*See pages 6 and 7 for group definitions.

Total Programme

Pre-Delivery Service
1 Month—1500 Kilometres
Inspection and Adjustment

Then as required: (Months — km)

A @ 6-10,000
B @ 12-20,000
A @ 18-30,000
C @ 24-40,000
A @ 30-50,000
B @ 36-60,000
A @ 42-70,000
C @ 48-80,000
A @ 54-90,000
B @ 60-100,000
A @ 66-110,000

Maintenance

Petrol and diesel engined models

Once the first service has been completed, dependability and performance are influenced by the degree of maintenance the vehicle receives.

Safety, economy and dependability cannot be assured unless regular maintenence is performed, preferably by factory-trained technicians. It is preferable to receive these services from the Dealer from whom the vehicle was purchased. However, maintenance will be attended to by any Authorised GMH Dealer on presentation of Maintenence Plan Booklet, no matter where you may be situated.

What the owner should do

When service, according to the time or distance interval, is due, the owner should present this Maintenance Plan Booklet to a GMH Dealer as an authority to have the items listed attended to. After this work is completed, the owner should see that the Validation Record is stamped and signed by the Dealer. The Booklet with the Validations completed is evidence that a vehicle has been adequately maintained. This is important as it will not only assist in the determination of Warranty Claims, but enhance the value of the vehicle whenever resale is contemplated.

What the Servicing Dealer has to do

Attend to all items listed for the particular service. When this has been done, it is most important that the Service Coupon Validation be signed by the Dealer or his representative.

All operations listed on the Service Coupons should be carried out following the procedures set out in the appropriate service manual.

The one month—1500 kilometre service will be performed without cost for labour by the Selling Dealer.

This service may be carried out by another GMH Dealer provided you have a letter of introduction from the Selling Dealer. Your Dealer will supply the necessary letter of introduction upon request.

Owner's responsibility

Normal maintenance services, as listed in the servicing schedule contained on pages 99 and 100 in this book, and replacement of service items, are the responsibility of the Owner and such are NOT considered, under the provisions of the New Vehicle Warranty, to be rectification of defects in material and workmanship.

Items such as wheel alignment, brake adjustment as a result of lining wear, etc., which may require servicing due to fair wear and tear, will be carried out at the owner's cost.

We strongly recommend that you read the Warranty Certificate at the front of the Owner handbook so that you are conversant with your entitlements.

Water and atmospheric conditions, varying road surfaces, individual driving habits and vehicle usage, greatly contribute to the need for constant maintenance services to promote efficient vehicle operation. (Refer over.)

Maintenance Plan

GROUP I

GROUP I Under Hood Operations
Change engine oil. (Every 5000 km)
Check all fluid levels, accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
Wipe inside of distributor cap. (Petrol only)
Inspect engine air cleaner element for restriction and condition. Replace if necessary.
Check air pre-heat control for correct cold and hot operation.
Check operation of idle stop solenoid.
Check automatic choke for free operation.
First "A" Service Only. Check torque of carburettor mounting bolts. Check operation of EGR valve, where fitted.
Clean radiator core—check for blockages.
GROUP I Under Vehicle Operations
Change engine oil filter. (Every 10,000 km)
Check transmission oil level.
Check rear axle oil level and front axle (4 X 4).
Inspect and lubricate front suspension and steering joints.
Lubricate transmission shift and clutch linkages as applicable.
Check parking brake operation and lubricate system. Adjust if necessary.
Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage—brake and fuel lines, shock absorbers and mountings.
Inspect engine and transmission mountings.
Check and adjust clutch control pedal height.
Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
Inspect disc brake pads for wear.
GROUP I Interior Vehicle Operations
Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
Seat belt inspection. Examine webbing condition, buckle operation and rectractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
GROUP I Exterior Vehicle Operations
Lubricate door handle pivots, door hinges, striker bolts or plates and hood lock and catch as required.
Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment.

Maintenance Plan

GROUP II

GROUP II Under Hood Operations
Lubricate distributor. Check condition of cap and rotor. Check TVRS cables for resistance. Replace spark plugs. Check ignition timing.
EGR System Only. Clean valve and manifold opening.
Auto Choke. Check and adjust if necessary settings.
Check ignition timing, engine idle speed and fast idle speed on choke cam. Adjust if necessary.
Serviceable PCV Valves—Dismantle, clean and re-assemble. Disposable PCV Valves—Test and replace if necessary.
Clean or replace fuel filter as necessary.
Drain and refill cooling system. Add specified quantity of anti-freeze.
GROUP II Under Vehicle Operations
Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.
Inspect front wheel bearings and check adjustment. Repack only if necessary.
Check steering box. Adjust if necessary.*
Check operation of transmission shift linkage. Adjust if necessary.

GROUP III

GROUP III Under Hood Operations
Replace air cleaner element if not yet changed in previous 24/40 period.
GROUP III Under Vehicle Operations
Repack front wheel bearings.
Inspect steering gear, linkage and dust covers for wear and security. Notify owner of any deficiencies, including loss of steering preload, for immediate rectification.

Additional Service—refer page 33.

N.B. It should be understood that whenever a B or C service is being carried out, some items on an earlier operation, may be superseded or modified by a later operation.

New Vehicle Preparation Validation

Your new vehicle has been inspected and prepared for delivery by your Dealer, in accordance with the manufacturer's New Vehicle Pre-Delivery Procedures.

Service Manager's Signature .....

Date ..... P.T.O

Pre-Delivery Operations

Check, and adjust if necessary, the following items:

Under Hood Operations
Oil levels of engine, brake master cylinders, and Battery Electrolyte level.
Hose connections, fill radiator and windshield washer reservoir. Ensure anti-freeze is present in radiator.
Air filter element.
Under Vehicle Operations
Oil, fuel, water and exhaust leaks.
Lubrication and operation of steering gear from lock to lock, if excessive free travel evident, adjust steering.
Oil levels in transmission, rear axle and transfer box.
Brake line connections—check hoses for correct clearance.
Brakes—foot and park.
Inspect tyres and inflate to recommended pressures. Check toe-in.
Tighten wheel nuts to specified torque.

Interior of Vehicle
Operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls.
Heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
Operation of all lights, including turn signals and hazard warning, C/A headlamp aim.
Inspect body trim and instrument panel.
Fit of floor mats and completely clean the interior of the vehicle.
Exterior of Vehicle
Wash vehicle, check paint, brush touch-up and minor repair as necessary and polish
Road Test
Operation of seat belt emergency locking retractors.
Road test for engine, braking, and steering performance, rattles and squeaks, **and correct if necessary.**
Steering wheel spoke position.
Clean steering wheel and control levers.
Check Tool and Jack stowage.
Check operation of locking hubs.

Mechanic's Signature ..... Date.....

Delivery Certificate

The dealer has completed the vehicle identification certificate, and has explained to the purchaser the terms and conditions of the General Motors-Holden's Sales Pty. Ltd., new vehicle warranty and notices and the contents of the owner's handbook. The dealer has informed the purchaser of his responsibility in respect of vehicle maintenance.

The dealer has demonstrated to the purchaser the operation of the vehicle and of all options and accessories.

The purchaser has been informed in writing of the fitting of any and all equipment or accessories not marketed by GMH or an affiliated company, and of any alterations or modifications which have been made to the vehicle and the effect on the GMH sales new vehicle warranty of such fitting, alteration or modification.

The purchaser has inspected the vehicle and acknowledges its delivery in accordance with this delivery procedure.

Purchaser's Signature ..... Date .....

Delivered by: Signature ..... Date .....

Owner's Name Mr. Mrs. Miss .....

Address .....

Town & State ..... Postcode .....

Reg. No. ..... Model Name .....

V.I.N. ..... Eng. No. .....

Cut—remove and keep in Dealer's file

To be kept in Dealer's file

To ensure continued interest in your vehicle, GMH requests that subsequent owners (not original purchaser) fill in and mail one of the attached.

Subsequent Owner Vehicle Identification Certificate

Owner's Name Mr. Mrs. Miss .....

Address .....

Town ..... Phone .....

State & Postcode .....

Reg. No. .....

Vehicle Identification Number (V.I.N.) .....

(Refer Specifications Section of this Manual for location)

Subsequent Owner Vehicle Identification Certificate

Owner's Name Mr. Mrs. Miss .....

Address .....

Town ..... Phone .....

State & Postcode .....

Reg. No. .....

Vehicle Identification Number (V.I.N.) .....

(Refer Specifications Section of this Manual for location)

Place in an envelope and mail to:

The Manager — Warranty Administration,
Service Department,
General Motors—Holden's Sales Pty. Limited,
Box 548D, G.P.O.,
Melbourne,
Victoria. 3001.

Place in an envelope and mail to:

The Manager — Warranty Administration,
Service Department,
General Motors—Holden's Sales Pty. Limited,
Box 548D, G.P.O.,
Melbourne,
Victoria. 3001.

1 MONTH — 1500 KILOMETRE INSPECTION AND ADJUSTMENT

This coupon should not be removed until this vehicle is presented for service.

Owner's Name Mr. Mrs. Miss .....

Address .....

Town & State ..... Postcode .....

Reg. No. ..... Model Name .....

V.I.N. ..... Eng. No. .....

Selling Dealer's Stamp and Signature .....

Date of Acquisition .....

This vehicle has been thoroughly checked in accordance with the schedule on the reverse side of this coupon.

Servicing Dealer .....

Town ..... State .....

Owner's Signature .....

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1 MONTH — 1500 KILOMETRE INSPECTION AND ADJUSTMENT

This vehicle has been thoroughly checked in accordance with the **1** *month —* **1,500** *kilometre inspection and adjustment.*

Dealer .....

Service Manager's Signature .....

Date ..... Odometer Reading .....

1 Month—1500 Kilometre, Inspection and Adjustment

Under Hood Operations
Change Oil Filter Element.
Check all Fluid Levels accessible in Engine Compartment.
Check Manifold Mounting Nuts and Cylinder Head Bolts Tightening Torque.
Adjust Valve Clearances.
Check Air Cleaner Element for Restriction under Extreme Dusty conditions.
Check all Hose Clips in Engine Compartment.
Check Ignition Timing, Engine Idle Speed and Fast Idle Speed on choke Cam. Adjust if necessary
Check operation of Early Fuel Evaporation (EFE) System for correct operation.
Check Condition and Tension of all Engine Drive Belts—using Tension Gauge
Check and Adjust Hood Lock and Safety Catch and Lubricate.
Under Vehicle Operations
Lubricate Front Suspension, (Ball and Steering Joints—where applicable).
Check Transmission, Transfer Box and Rear Axle Oil levels.
Inspect all Brake Line Connections and Hoses for Leakage and Clearance.
Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
Check Steering Connections.
Check and Adjust Clutch Control Pedal Height.
Interior Vehicle Operations
Check operation of Instruments, Lights, Hazard Warning, Turn signals, Horn, Windshield Wipers and Washers, Seat Belts, Seat Adjustment Mechanisms and Mirrors.
Check Operation of Parking Brake.
Exterior Vehicle Operations
Check Headlamp Aim, Adjust if necessary.
Check Door Lock Operation, Striker Plates, Handles, etc. and Lubricate.
Road Test Programme
All Rattles, Squeaks, Vibrations and Noises should be checked and rectified.
Check vehicle on the road for even braking and steering, transmission operation, engine response and parking brake operation. Check mirrors, seat adjustment and transmission shift pattern.

This Inspection and Adjustment will be carried out without charge to the owner except for any lubricants, etc. used. The Designated Servicing Programme is not to be exceeded without the Owner's prior agreement to additional servicing charges.

6 Months or 10,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

6 Months — 10,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g. brake, coolant, washer, battery electrolyte.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Drain fuel filter (Diesel) and clean fuel pump strainer.
	Wipe inside of distributor cap.
	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check air pre-heat control assembly for correct cold and hot setting.
	Check operation and setting of idle stop solenoid.
	Check torque of carburettor mounting bolts.
	Clean radiator core — check for blockages.
	Change transmission lubricant.
	Change rear axle lubricant. Change front axle lubricant (4 X 4)

	Under Vehicle Operations
	Change engine oil filter.
	Change transfer box lubricant (4 X 4).
	Inspect and lubricate front suspension and steering joints. (Chassis lubrication as chart)
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check and adjust clutch fork operating rod free travel.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.

A Service

P.T.O.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and park brake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

Dealer .....

Date .....

Odometer .....

Signed .....

12 Months — 20,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Adjust valve clearance.
	Check tightness of manifold and cylinder head bolts.
	Lubricate distributor. Check condition of points, cap and rotor. Wipe inside of distributor cap. Check TVRS cables for resistance. Replace spark plugs.
	EGR System Only— Clean valve and manifold opening.
	Check operation of exhaust heat manifold valve for free operation.
	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Auto Choke — Check and adjust if necessary settings. Check and adjust if necessary fast idle speed on choke cam. Check choke for free operation.
	Check air pre-heat control assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Replace fuel filter.
	Drain and refill cooling system. Add specified quantity of anti-freeze. Clean radiator core — check for blockages.
	Under Vehicle Operations
	Change engine oil filter.
	Check transmission oil level.
	Check rear axle oil level and front axle (4 X 4).

B Service

P.T.O.

	Inspect and lubricate front suspension and steering joints and steering gear (see chassis lubrication chart).
	Inspect steering gear, linkage and dust covers for wear and security. Notify owner of any deficiencies, including loss of steering preload, for immediate rectification.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings. Check and adjust clutch fork operating rod free travel.
	Check operation of transmission shift linkage. Adjust if necessary.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.
	Inspect front wheel bearings and check adjustment. Repack only if necessary.
	Check steering box and adjust if necessary.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

18 Months or 30,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

18 Months — 30,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g. brake, coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Replace fuel filter element (diesel).
	Wipe inside of distributor cap.
	Check operation of exhaust heat manifold valve for free operation.
	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check air pre-heat control damper assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Check automatic choke for free operation.
	Clean radiator core — check for blockages.

	Under Vehicle Operations
	Change engine oil filter.
	Check transmission oil level.
	Check rear axle oil level and front axle (4 X 4).
	Inspect and lubricate front suspension and steering joints.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check and adjust clutch fork operating rod free travel.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.

P.T.O.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

24 Months or 40,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

SERVICE

24 Months — 40,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g brake coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Lubricate distributor. Check condition of points, cap and rotor. Wipe inside of distributor cap. Check TVRS cables for resistance. Replace spark plugs.
	EGR System Only— Clean valve and manifold opening.
	Check operation of exhaust heat manifold valve for free operation
	Replace air cleaner element.
	Auto Choke — Check and adjust if necessary settings. Check and adjust if necessary fast idle speed on choke cam. Check choke for free operation.
	Adjust valve clearance.
	Check tightness of manifold and cylinder head bolts.
	Replace deceleration sensing valve.
	Check air pre-heat control assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Check and adjust if necessary engine idle speed
	Serviceable PCV Valves — Dismantle, clean and reassemble. Disposable PCV Valves — Test and replace if necessary.
	Clean or replace fuel filter as necessary.
	Drain and refill cooling system. Add specified quantity of anti-freeze. Clean radiator core — check for blockages.
	Evaporative control system. Check all fuel and vapour lines and hoses for proper connections and correct routing as well as condition. Remove cannister and check for cracks or damage. Replace damaged or deteriorated parts as necessary. Replace filter.
	Under Vehicle Operations
	Change engine oil filter.
	Change lubrication in transmission and transfer box (4 X 4).
	Change rear axle lubrication and front axle (4 X 4).
	Inspect and lubricate front suspension and steering joints.

PTO

Service

	Inspect steering gear, linkage and dust covers for wear and security. Notify owner of any deficiencies, including loss of steering preload, for immediate rectification.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check and adjust clutch fork operating rod free travel.
	Check operation of transmission shift linkage. Adjust if necessary.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment
	Repack front wheel bearings.
	Check steering box and adjust if necessary.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

30 Months or 50,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

30 Months — 50,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g. brake, coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Replace fuel filter (diesel).
	Wipe inside of distributor cap.
	Check operation of exhaust heat manifold valve forfree operation.
	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check air pre-heat control damper assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Check automatic choke for free operation.
	Clean radiator core — check for blockages.

	Under Vehicle Operations
	Change engine oil filter.
	Check transmission oil level.
	Check rear axle oil level and front axle (4 X 4).
	Inspect and lubricate front suspension and steering joints.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check and adjust clutch fork operating rod free travel.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.

P.T.O

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

36 Months — 60,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5,000 km)
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Adjust valve clearance.
	Check tightness of manifold and cylinder head bolts.
	Change steering gear lubricant.
	Lubricate distributor. Check condition of points, cap and rotor. Wipe inside of distributor cap. Check TVRS cables for resistance. Replace spark.
	EGR System Only— Clean valve and manifold opening.
	Check operation of exhaust heat manifold valve for free operation.
	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Auto Choke Check and adjust if necessary settings Check and adjust if necessary fast idle speed on choke cam Check choke for free operation.
	Check air pre-heat control assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Check and adjust if necessary engine idle speed.
	Serviceable PCV Valves — Dismantle, clean and reassemble. Disposable PCV Valves — Test and replace if necessary.
	Clean or replace fuel filter as necessary.
	Drain and refill cooling system. Add specified quantity of anti-freeze. Clean radiator core — check for blockages.
	Under Vehicle Operations
	Change engine oil filter.
	Check transmission oil level.
	Check rear axle oil level and front axle (4 X 4).
	Inspect and lubricate front suspension and steering joints.
	Inspect steering gear, linkage and dust covers for wear and security. Notify owner of any deficiencies, including loss of steering preload, for immediate rectification.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.

P.T.O

	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check and adjust clutch fork operating rod free travel.
	Check operation of transmission shift linkage. Adjust if necessary.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.
	Inspect front wheel bearings and check adjustment. Repack only if necessary.
	Check steering box and adjust if necessary.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

42 Months or 70,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

42 Months — 70,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g. brake, coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Change fuel filter (diesel).
	Wipe inside of distributor cap.
	Check operation of exhaust heat manifold valve for free operation
	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check air pre-heat control damper assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Check automatic choke for free operation.
	Check torque of carburettor mounting bolts. Check operation of EGR valve, where fitted.
	Clean radiator core— check for blockages.

	Under Vehicle Operations
	Change engine oil filter.
	Check transmission oil level.
	Check rear axle oil level and front axle (4 X 4).
	Inspect and lubricate front suspension and steering joints
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage— brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings
	Check and adjust clutch fork operating rod free travel.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.

PTO

A Service

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

Dealer .....
Date .....
Odometer .....
Signed .....

48 Months — 80,000 Kilometres Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Replace deceleration sensing valve.
	Lubricate distributor. Check condition of points, cap and rotor. Wipe inside of distributor cap Check TVRS cables for resistance. Replace spark.
	EGR System Only— Clean valve and manifold opening.
	Check operation of exhaust heat manifold valve for free operation.
	Replace air cleaner element if not yet changed in previous 24/40 period.
	Auto Choke— Check and adjust if necessary settings Check and adjust if necessary fast idle speed on choke cam. Check choke for free operation
	Check air pre-heat control damper assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Check and adjust if necessary engine idle speed.
	Serviceable PCV Valves—Dismantle, clean and reassemble. Disposable PCV Valves—Test and replace if necessary.
	Clean or replace fuel filter as necessary.
	Drain and refill cooling system. Add specified quantity of anti-freeze. Clean radiator core check for blockages.
	Evaporative control system. Check all fuel and vapour lines and hoses for proper connections and correct routing as well as condition. Remove cannister and check for cracks or damage. Replace damaged or deteriorated parts as necessary. Replace filter.
	Under Vehicle Operations
	Change engine oil filter.
	Change lubrication in transmission and transfer box (4 X 4).
	Change rear axle lubrication and front axle (4 X 4).
	Inspect and lubricate front suspension and steering joints.
	Inspect steering gear, linkage and dust covers for wear and security. Notify owner of any deficiencies, including loss of steering preload, for immediate rectification.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.

PTO

	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage—brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check and adjust clutch fork operating rod free travel.
	Check operation of transmission shift linkage. Adjust if necessary.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.
	Repack front wheel bearings.
	Check steering box and adjust if necessary.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

54 Months or 90,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

54 Months — 90,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g. brake, coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Wipe inside of distributor cap.
	Check operation of exhaust heat manifold valve for free operation.
	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check air pre-heat control damper assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Check automatic choke for free operation.
	Check torque of carburettor mounting bolts. Check operation of EGR valve, where fitted.
	Clean radiator core—check for blockages.

	Under Vehicle Operations
	Change engine oil filter.
	Check transmission oil level.
	Check rear axle oil level and front axle (4 X 4).
	Inspect and lubricate front suspension and steering joints.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage—brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check and adjust clutch fork operating rod free travel.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.

P.T.O.

Interior Vehicle Operations	
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiences observed for immediate rectification.

Exterior Vehicle Operations	
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

Dealer .....

Date .....

Odometer .....

Signed .....

60 Months — 100,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Lubricate distributor. Check condition of points, cap and rotor. Wipe inside of distributor cap. Check TVRS cables for resistance. Replace spark.
	EGR System Only— Clean valve and manifold opening.
	Check operation of exhaust heat manifold valve for free operation.
	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Auto Choke— Check and adjust if necessary settings. Check and adjust if necessary fast idle speed on choke cam. Check choke for free operation.
	Check air pre-heat control damper assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Check and adjust if necessary engine idle speed.
	Serviceable PCV Valves — Dismantle, clean and re-assemble. Disposable PCV Valves — Test and replace if necessary.
	Clean or replace fuel filter as necessary.
	Drain and refill cooling system. Add specified quantity of anti-freeze. Clean radiator core — check for blockages.
	Under Vehicle Operations
	Change engine oil filter.
	Check transmission oil level.
	Check rear axle oil level.
	Inspect and lubricate front suspension and steering joints.
	Inspect steering gear, linkage and dust covers for wear and security. Notify owner of any deficiencies, including loss of steering preload, for immediate rectification.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Check parking brake operation and lubricate system. Adjust if necessary.

P.T.O

	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check and adjust clutch fork operating rod free travel.
	Check operation of transmission shift linkage. Adjust if necessary.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.
	Inspect front wheel bearings and check adjustment. Repack only if necessary.
	Check steering box and adjust if necessary.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

66 Months or 110,000 km

Dealer.....

Date.....

Odometer.....

Signed.....

A SERVICE

66 Months — 110,000 Kilometre Service

	Under Hood Operations
	Change engine oil. (Every 5000 km)
	Check all fluid levels accessible in engine compartment, e.g brake, coolant, washer, battery electrolyte, auto transmission, power steering reservoir.
	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Wipe inside of distributor cap.
	Check operation of exhaust heat manifold valve for free operation.
	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check air pre-heat control damper assembly for correct cold and hot operation.
	Check operation and setting of idle stop solenoid.
	Check automatic choke for free operation.
	Check torque of carburettor mounting bolts. Check operation of EGR valve, where fitted.
	Clean radiator core — check for blockages.

	Under Vehicle Operations
	Change engine oil filter
	Check transmission oil level.
	Check rear axle oil level.
	Inspect and lubricate front suspension and steering joints.
	Lubricate accelerator, transmission shift and clutch linkages as applicable
	Check parking brake operation and lubricate system. Adjust if necessary
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check and adjust clutch fork operating rod free travel.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Inspect disc brake pads for wear.

PTO

A Service

Interior Vehicle Operations	
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.

Exterior Vehicle Operations	
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock or end-gate regulator as required.
	Check vehicle on the road for even braking and steering, transmission operation, engine response and handbrake operation. Check mirrors, seat adjustment and transmission shift pattern.

Additional Service—refer page 127.

Suggested Labour Times

For Work Performed during Guardian Maintenance Services

"A" SERVICE — BASIC SERVICE TIME — 1.6 HR.
"B" SERVICE — BASIC SERVICE TIME — 2.5 HR.
"C" SERVICE — BASIC SERVICE TIME — 3.8 HR.

THE OWNER WILL BE CHARGED FOR LUBRICATIONS AND MATERIALS USED PLUS LABOUR
AT THE TIMES RECOMMENDED ABOVE

*** ADDITIONS TO BASIC SERVICE**

ADDITIONAL TIME AND MATERIAL REQUIRED FOR SERVICING OPTIONAL EQUIPMENT OTHER THAN THAT FITTED TO A BASIC VEHICLE AND REPAIRING OR REPLACING ANY PART FOUND FAULTY DURING THE SERVICE CHECK AND INSPECTION, WILL BE ADDED TO THE SUGGESTED LABOUR TIME AND CHARGES.

WHERE ANY DEFICIENCIES ARE NOTED SUCH ITEMS SHOULD BE REPORTED TO THE OWNER/OPERATOR SO THAT THE EXTRA WORK REQUIRED CAN BE AUTHORISED.

*** ADDITIONAL SERVICES & TIMES WHERE APPLICABLE:**

FIRST "A" SERVICE	0.2 HR.
FRONT WHEEL BEARING REPACK	
— "B" SERVICE	0.5 HR.
— "C" SERVICE	0.6 HR.

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IFC—Inside Front Cover
IBC—Inside Back Cover

Safety checks

This section discusses the various components and systems of your vehicle that should be checked regularly to help maintain safe and dependable vehicle operation. Some checks should be made by your dealer or service station, and can be done conveniently while your vehicle is in the shop for other regular maintenance service. Other checks can be made easily by you, the owner.

Checks to be performed by your dealer or service station

Checks to be made at first 1,000 km (600 miles)

- Drive belt—Check fan drive belt for cracks, wear and tension.
  Adjust or replace as necessary.

Checks to be made every 10,000 km (6,000 miles) or 4 months, whichever occurs first.

- **Drive belt**—Check fan drive belt for cracks, wear and tension.
  Adjust or replace as necessary.
- **Fluid or lubricant levels**—Check level of fluid or lubricant in brake master cylinder, battery, rear axle, front axle (4 × 4 models), engine and transmission. Check fluid level of windshield washer reservoir. Engine coolant should be checked for proper level. Any significant fluid loss in any of these systems or units could mean that a malfunction is developing and corrective action should be taken immediately.
- **Suspension and steering**—Check for damaged, loose or missing parts, or parts showing visible signs of excessive wear or lack of lubrication in front and rear suspension and steering system. Questionable parts noted should be replaced by a qualified mechanic without delay.
- **Tyres and wheels**—Check tyres for excessive wear, nails, glass, cuts or other damage. Make certain wheels are not bent or cracked and wheel nuts are tightened to 88Nm (65 ft-lbs). Uneven or abnormal tyre wear may indicate the need for alignment service. Check tyre inflation pressure at least monthly, or oftener if daily visual inspection indicates the need.
  Truck type tyres should be replaced when tread depth becomes 1.6 mm (1/16 inch).
- **Exhaust system**—Check complete exhaust system and nearby body areas for broken, damaged, missing or mispositioned parts, open seams, holes, loose connections or other deterioration which could permit exhaust fumes to seep into passenger compartment. Dust or water inside the cab may be an indication of a problem in one of these areas. Any defects should be corrected immediately. To help ensure continued integrity, exhaust pipes rearward of the muffler must be replaced whenever a new muffler is installed. Use genuine parts specified for your vehicle.
- **Parking brake linkage**—Lubricate all parking brake linkage with water resistant chassis lubricant as specified. Check for damaged or missing parts, interference or binding. Any deficiencies should be corrected without delay by qualified mechanic.
- **Brake lines and hoses**—Check lines and hoses for proper attachment, leaks, cracks, chafing, deterioration, etc. Any questionable parts noted should be replaced or repaired immediately. When abrasion or wear is evident on lines or hoses, the cause must be corrected, and the lines or hoses replaced.

Checks to be made every 20,000 km (12,000 miles) or 12 months, whichever occurs first.

- **Lighting system**—Check headlights for proper aim. Correct as necessary. More frequent checks should be made if oncoming motorists signal when you are already using your low beams, or if illumination of the area ahead seems inadequate.
- **Accelerator control**—Lubricate accelerator pedal bushing with chassis lubricant. Check for damaged or missing parts, interference or

binding. Any deficiencies should be corrected without delay by a competent mechanic.

- **Service brakes and parking brake**—Check disc and drum brake linings and other internal brake components at each wheel (drums, wheel cylinders, etc.).

  Parking brake adjustment also should be checked whenever drum brake linings are checked.

  Note: Replace deceleration sensing valve every 2 years.

Checks to be performed by owner

(Owner safety check)

Listed below are the safety checks that should be made by the owner.

These checks should be made every 4 months or 10,000 km (6,000 miles) whichever occurs first, or more often when the need is indicated. Any deficiencies should be brought to the attention of your dealer, as soon as possible, so the advice of a qualified mechanic is available regarding the need for repairs or replacements.

- **Lap and shoulder belts**—Check belts, buckles, retractors and anchors for cuts, fraying or weakened portions, loose connections, damage, and proper latching and releasing action. Check that anchor mounting-bolts are tight to the floor.
- **Steering**—Be alert to any changes in steering action. The need for inspection or servicing may be indicated by "hard" steering, excessive free play or unusual sounds when turning or parking.
- **Windshield wipers and washers**—Check condition and alignment of wiper blades. Check amount and direction of fluid sprayed by washers during use.
- **Wheel alignment and balance**—In addition to abnormal tyre wear the need for wheel alignment service may be indicated by a pull to the right or left when driving on a straight and level road. The need for wheel balancing may be indicated by a vibration of the steering wheel or front end while driving.
- **Brakes**—Be alert to changes in braking action such as repeated pulling to one side, unusual sounds when braking or increased brake pedal travel. Any of these could indicate the need for brake system inspection and/or service.
- **Parking brake**—Check parking brake holding ability by parking on fairly steep hill and restraining the vehicle with the parking brake only.
- **Glass**—Check for broken, scratched, dirty or damaged glass on vehicle that could obscure vision or become an injury hazard.
- **Lights**—Check all instrument panel indicator lamps, and interior lights, and licence plate lamp, headlamps, parking lamps, tail lamps, stop lamps, turn signals, backup lamps, clearance lamps and hazard warning flashers. Have someone observe operation of each exterior light while you activate the controls.

- **Horn**—Blow the horn occasionally to be sure that it works.
- **Rearview mirrors and sun visors**—Check that friction joints are properly adjusted so mirrors and sun visors stay in the selected position.
- **Door latches**—Check for positive closing, latching and locking.
- **Hood latches**—Check to make sure hood closes firmly by lifting on the hood after each closing. Check also for broken, damaged or missing parts which might prevent secure latching.
- **Fluid leaks**—Check for fuel, water, oil or other fluid leaks by observing the ground beneath the vehicle after it has been parked for a while. Also observe fluid lines and hoses connection points. If petrol fumes or fluid are noticed at any time, the cause should be determined and corrected without delay because of the possibility of fire.
- **Seat back latches**—Check to see that seat back latch is holding by pulling forward on the top of folding seat back.

Conscientious attention to all of these safety checks on a regular basis and prompt correction of any problems will help to keep you, your passengers and your vehicle safer, thus avoiding or reducing potential injuries and damage.

Service station checklist

This checklist is a summary of detailed information contained elsewhere in the Handbook.

Fuel

Petrol: Your Rodeo is designed to operate on 89 octane rating fuel (Standard).

Diesel: If your Rodeo is equipped with a Diesel engine use a Diesel fuel of 45 cetane rating minimum.

Refer page 3.

Bonnet release: Pull the T lever under the right side of the dash. The bonnet will automatically release. To fully open lift the safety catch lever located underneath the front edge of the bonnet, slightly to the passenger side of centre, raise the bonnet, unclip the stay rod and place in the locating hole for support. To close—free the stay rod and replace in the retaining clip, lower the bonnet and press down firmly until the lock is engaged.

Engine oil: Check oil level and maintain at level indicated by checked area on dipstick.

Refer page 81.

Radiator coolant level:
Maintain at 2-3 cm below bottom of filler neck. Check at least weekly.

Refer page 86 (Overheating, page 45).

Battery: Check electrolyte fluid level.

Refer page 82.

Windshield washer: Check reservoir fluid level and top up as required.

Tyre pressures: Check pressures weekly and maintain as specified on the chart found inside the glove box lid.

Refer page 93.

Service station information

Refer to ''Service and Maintenance'' Section for further details

Petrol cap

NOTE: If the petrol cap requires a replacement, only a genuine GMH replacement cap should be used. Failure to use the correct cap can result in a serious malfunction of the system. Correct replacement caps may be obtained from your GMH dealer.

Hood release—To raise the engine hood, unlock the safety catch by pulling the release lever under the instrument panel (driver's side), raise the hood all the way up and engage rod in head reinforcement so that it stays in position. Be sure support rod end engages in the hole on the head reinforcement.

To close, remove the support rod end from the hole on the hood reinforcement put the support rod back into the clip on the deflector panel. Then, lower the engine hood to a horizontal level and push down on the front until it is locked in position.

Engine dip stick—Located on side of engine block. Check oil level as the last operation in a fuel stop. Maintain between high and low level indicated in the dipstick.

Engine oil recommendation—Use SE oil for petrol engine, and CC or CD oil for diesel engine. The chart in the Service and Maintenance section will serve as a guide for selecting proper oil viscosity.

Tyre inflation pressures—Check at least monthly. Keep inflated to pressures shown in Tyre Inflation Table in the ''Service and Maintenance'' section.

Windshield washer—Check reservoir fluid level regularly. Use a washer fluid of well known brand.

Battery—Check fluid level monthly. If the fluid level is low, add only colourless, odourless drinking water or distilled water to bring level to bottom of the vent well in filler opening.

ACCIDENTS

All motorists are advised to learn what to do at the scene of an accident, particularly where persons are injured. Injured people can choke to death if their air passages are not cleared. They can bleed to death unless the bleeding is stopped. They may require mouth-to-mouth resuscitation, may have to be moved, even though badly injured. It is important that you understand how to avoid further damaging an injured neck or back or other broken limbs.

The following notes may help.

- **Part 1. Accident—being involved.**
- **Part 2. Accident—being a witness.**
- **Part 3. Medical assistance.**

Part 1. Accident—being involved

If you are involved in an accident you are advised to do as follows:

Stop immediately.

Remember that time is vital. Remain calm and alert. Think quickly and clearly.

Give all possible assistance to all injured persons. (See Part 3 Medical Assistance.)

Send for police and ambulance if anyone has been injured. Send information as accurately as possible. Give the exact location, the number of injured people and a brief report on the overall situation.

Perhaps take charge of the situation.

Warn all other traffic approaching the scene. Turn off ignition switches. Stop any smoking near spilt petrol. In darkness, try and light up the area to warn others.

Clear the road of accident debris.

Exchange your name, address, vehicle registration number and the vehicle owner's name and address with the other parties involved in the accident.

If damage to property only has occurred, report the facts to the owner of the damaged property or to his or her representative; to any police present at the scene or to the nearest Police Station.

Try and note all important facts because such details may be important if needed later.

Part 2. Accident—being a witness

If you witness a road accident or it becomes your task to stop and help at the scene of an accident, do this:

Keep in mind that an observant witness can prove most helpful. Some day you yourself might be very glad of help from a witness.

DO NOT stop at the scene of an accident *just to be a spectator.*

Where other people are already in attendance and giving assistance, **you should stop only if you can contribute assistance.**

Give what assistance you can to any injured persons. (See Part 3 Medical Assistance.)

Follow most of the steps suggested in Part 1. Perhaps you may have to take charge of the accident situation.

Part 3. Medical Assistance

Keep calm and think clearly.

Your experience may not be much but do your best. Don't just stand by and let an injured person die.

- Look after the unconscious person first. Check for breathing. If no breathing, then check if air passages

are clear, i.e. nose and mouth. Use your fingers to clear air passages if necessary. If the air way is clear then mouth-to-mouth resuscitation may be needed at once.

Unconscious people can choke.
Carefully turn to one side.
Tilt the head back slightly.
Wipe out the mouth with your finger to remove blood, vomit, broken teeth or dentures.

- You must be most careful in moving an injured person. Often it is best not to move at all but, in conditions of danger, that is not always possible. Serious and permanent damage can be done to an injured neck or back if not supported during movement. NEVER BEND A NECK OR BACK. KEEP THEM STRAIGHT. All injured limbs require support when an injured person has to be moved.
- Provided it is not dangerous to do so because of other injuries, an unconscious person will do best in the "coma position" illustrated here.

Lay the person on one side and—if it will not aggravate any injuries—then: Bend the uppermost knee until the thigh is at right angle to body.
Bend the uppermost arm and elbow so that the hand lies near the face.
Gently pull the underneath arm so that it rests straight on the ground free of any body weight.

- Try to stop bleeding by applying direct pressure, using your hands, or by pressing torn flesh together. Use any clean cloth available. Fold cloths to make pads. If necessary, press one pad on top of another. Keep pressure around edges of a wound BUT NEVER USE A TOURNIQUET.

Shock may be treated by reassurance, relieving pain, controlling any bleeding and keeping the injured person warm *but not hot.* Best not to give any fluids and NEVER ALCOHOL.

- If the injured person is in danger and has to be moved, try and have three or four people help and concentrate on not bending the neck, spine and injured limbs. **Keeping the neck and spine straight is most important.**

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